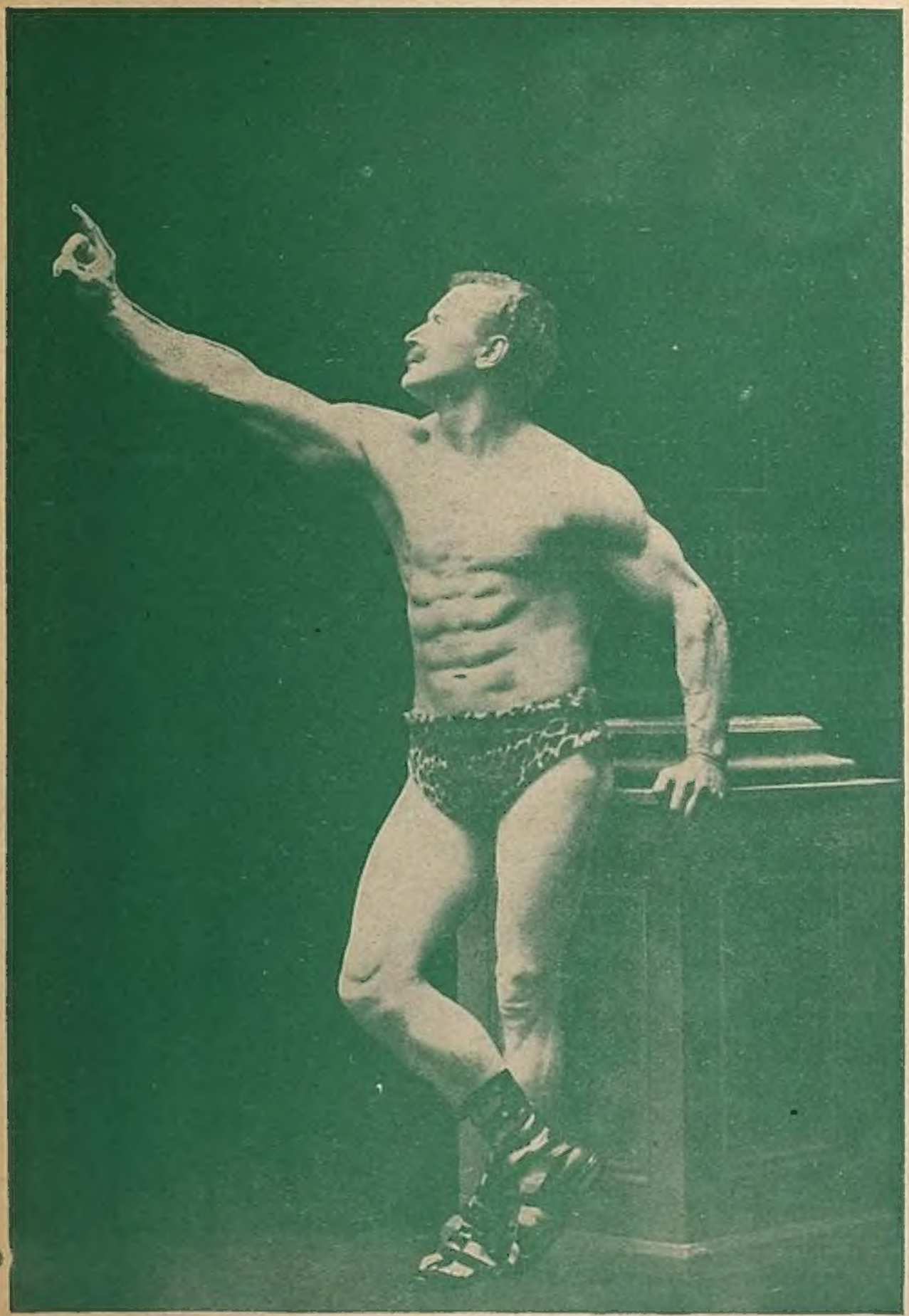
SANDOW'S PHYSICAL CULTURE MAGAZINE.

Vol. XVII.
No. 3.

July 19th, 1906.

2d.



THE EDITOR (EUGEN SANDOW).

Digitized by Google

GAMAGES

EVERYTHING FOR CRICKET.
THE LARGEST EXHIBITION OF BATS IN LONDON.
Complete Outfitting a Speciality.

Over a thousand to select from!
Buy now and take your choice!!!

A New Speciality: Gamage's "Australian." — Choice blade, patent leather and pneumatic rubber grip treble spring handle, giving enormous driving power, *21/-* post free.

The Famous "Gamage" — A Bat with a reputation. Great driving power, selected light willow. Every Bat warranted. *18/6* each. Youths' size, *15/6*.

The "A.W.G." — A beautiful Bat, skilfully modelled. Combination rubber and cane handle, *10/6*.

The "Yorkshire Driver." — Patent spring handle, warranted *14/6*.

The "Club." — All cane handle, *8/11*.

EVERY KNOWN SPORT LIBERALLY CATERED FOR.

CRICKET BALLS.

Gamage's "Referee." — Warranted 3-seam leather, *4/6*. Youths' match size, *4/-* each.

Gamage's Celebrated "Australian." — Silk and gut sewn, warranted *5/-*, postage, 2d.

The "Club," 3/6. Youths', *3/1*. 3-Seam Leather Practice Balls, *2/-* Composition Ball, *10d.* Practice, *6d.* Boys', *4d.* M.C.C. Regulation, *1/9*.

LEG GUARDS.

White Buck, with continuous straps	*5/11*
Youths' size	*5/6*
Men's White Drill Guards	*3/6*
Youths'	*3/3*

WICKETS.

Polished ash, superior brass tops, steel shoes, *4/11*. Youths' size, *4/6*.
Large Range at all prices, from *10½d.* upwards.

THE SPORTSMAN'S GUIDE, OUR CATALOGUE, SENT POST FREE.

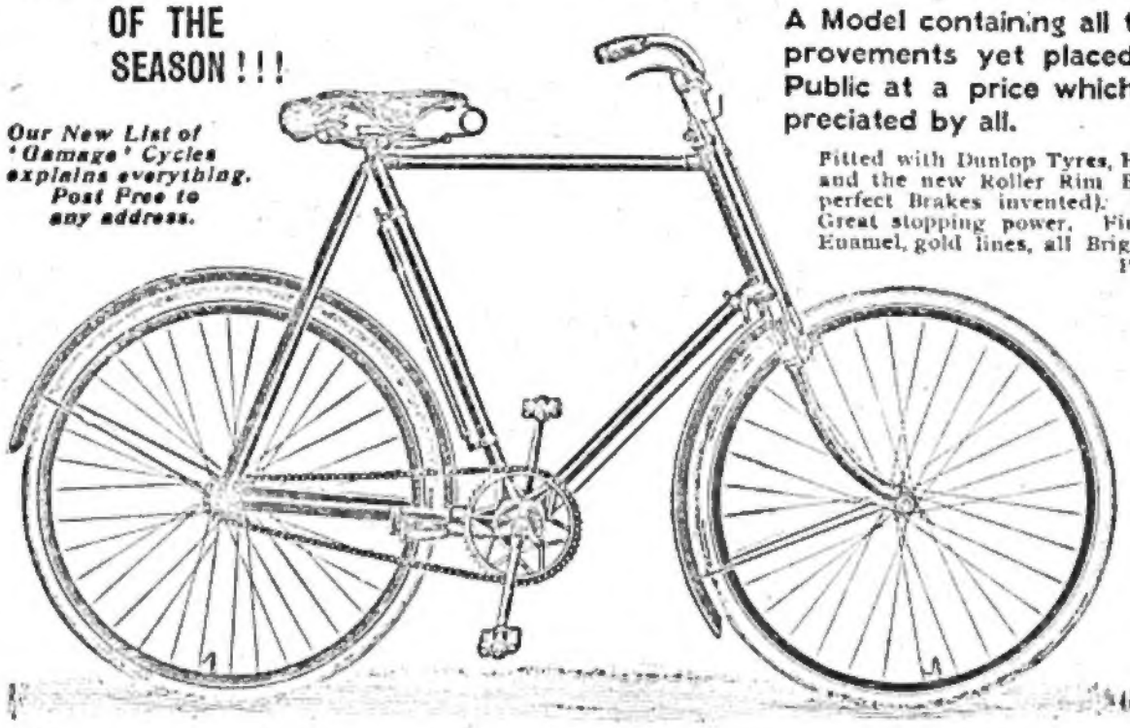
THE 1906 "GAMAGE"

THE CYCLE OF THE SEASON!!!

Our New List of 'Gamage' Cycles explains everything. Post Free to any address.

Built for the Rider who has ideas about a Good Machine.

A Model containing all the latest improvements yet placed before the Public at a price which will be appreciated by all.



Fitted with Dunlop Tyres, Hyde Free Wheel and the new Roller Rim Brakes (the most perfect Brakes invented). Delicate Action. Great stopping power. Finish, Best Black Enamel, gold lines, all Bright Parts heavily Plated on Copper.

£7 15s.

or 12 Monthly Payments of *13/7*.

Fitted with Pagan Two-Speed Hub or the Sturmey Archer Three-Speed Gear, the new Roller Rim Brakes, Dunlop Tyres, gold lined and plated rims.

£9 10s.

or 12 monthly payments of *16/7*.

A. W. GAMAGE, LTD.—HOLBORN, LONDON, E.C.

BODLEIAN 27-8-1906 LIBRARY

Digitized by Google

THE EVERY DAY Series of Publications.

1 Exercise and Training
2 Baths and Bathing
3 Health in Schools
4 The Skin and its Troubles
5 How to make the Best of Life
6 Nerves and Nerve-Troubles
7 The Sight and how to preserve it
8 Premature Death, its Promotion or Prevention
9 Change, as a Restorative
10 Gentle Art of Nursing the Sick
11 Care of Infants and Children
12 Invalid Feeding, with Hints on Diet
13 Every-day Ailments, and how to treat them
14 Sleep and Sleeplessness
15 The Story of Life
16 How to do Business. A Manual of Practical Affairs
17 How to Behave. A Pocket Manual of Etiquette
18 How to Write
19 How to Debate. With Hints on Public Speaking
20 Don't: Directions for avoiding Improprieties in Conduct
21 The Parental Don't: Warnings to parents
22 Why smoke and Drink?
23 Elocution
24 The Secret of a Clear Head
25 Common Mind Troubles
26 The Secret of a Good Memory
27 Youth: Its Care and Culture
28 The Heart and its Function
29 Personal Appearances in Health and Disease
30 Alcohol: Its Use and Abuse

In Parchment Covers, 6d. each.
POSTAGE 1d. EXTRA,
3 Copies assorted, POST FREE.

Apply Sandow's Magazine, Book Dept., 131 Temple Chambers, London, E.C.

MENTAL DEPRESSION

Its Cause and Treatment

Based on Modern Medical Reform Science and Successful Practical Experience.

Lucidly explained for the purpose of **SELF-TREATMENT WITHOUT MEDICINE**

By RICHARD J. EBBARD,

Author of "Will Power," "Life-Giving Energy," "The Bedrock of Health," "Dyspepsia and Constipation," &c., &c.

This book will prove a boon and a blessing to all who are the victims of symptoms of Mental Depression, especially to those whose occupation is of a sedentary character, and who are therefore subject to Indigestion and Dyspepsia. Its style is clear, concise and free from the intricacies of pretentious and expensive works; moreover, its price places it within the reach of all.

Price 2s. 9d., Post Free.

Apply SANDOW MAGAZINE Co. (Library Dept.), TEMPLE CHAMBERS, LONDON, E.C.

Are we a Declining Race?

By WALTER HUNT.

The question of degeneration is forcing itself more upon the notice of the thinking people of this country, and signs are not wanting that the public mind is becoming greatly disturbed about it. The above work deals most thoroughly with the causes, and is a most instructive treatise on the subject.

Price 1s. 2d. Post Free.

SANDOW'S MAGAZINE Book Dept., 131, Temple Chambers, London, E.C.

WEAK MEN.

Nervous and Physical Weaknesses, Genito-urinary troubles, lack of Vigour, Varicocele, and all the allied troubles. Send for treatise with full particulars, including hundreds of testimonials of complete cures. No electricity. Sent sealed, free of all charge.

J. A. MURRAY,
7, Southampton Row, London, W.C.

Cameras for the Holidays

Having entered into an agreement with one of the LARGEST MANUFACTURERS OF CAMERAS IN THE WORLD there is now a—

RARE OPPORTUNITY

For Amateurs to purchase high-class machines at

EXCEPTIONALLY LOW PRICES.

The ATHLETE.

This machine takes 12 plates or 24 Films 3¼ by 4¼.
Packed in box with book of instructions.

PRICE - - - 25/- post free.

Specification.

BODY—Mahogany, front interior polished

FRONT DOOR opens for adjusting shutter or cleaning lens.

LENS is of large diameter, single achromatic meniscus, best quality.

SHUTTER—New patent design, mounted on aluminium plate, having very large aperture and fine adjustment to speeds, gives both long time, bulb and instantaneous exposures.

SPEEDS are marked approximately 1-100, 1-50, 1-25, 1-10, ½ and 1 second.

DIAPHRAGMS are *f*/8, *f*/11, *f*/16, *f*/22, and *f*/32, adjustable iris movement.

MAGNIFIERS for objects at 4, 8 and 12 feet.

FINDERS are the finest brilliant pattern.

SHEATHS are very easily loaded with plates or films.

CHANGING MOVEMENT—New infallible pattern, SHEATHS INSERTED IN ANY ORDER.

AUXILIARY DOOR—Patented. in Aluminium, fitted in the back, to prevent unexposed plates falling out when back of camera is opened.

RECORDER gives number of plates exposed up to 24.

COVERING is handsome Morocco-grained leatherette.

SCREW is supplied for fixing to tripod.

THE TEMPLE.

PRICE 12s. 6d., POST FREE.

Fitted with Patent Auxiliary back door, and magnifies, takes six plates or twelve films, 3¼ by 4¼, covered in handsome Morocco grained leatherette. Best quality Achromatic-view lens. Magnifies revolving objects at 4, 8, and 12 feet. Time and instantaneous shutter. Recorder showing number of prints exposed.

The above goods are carefully tested before despatched, and for value cannot be beaten at the price.

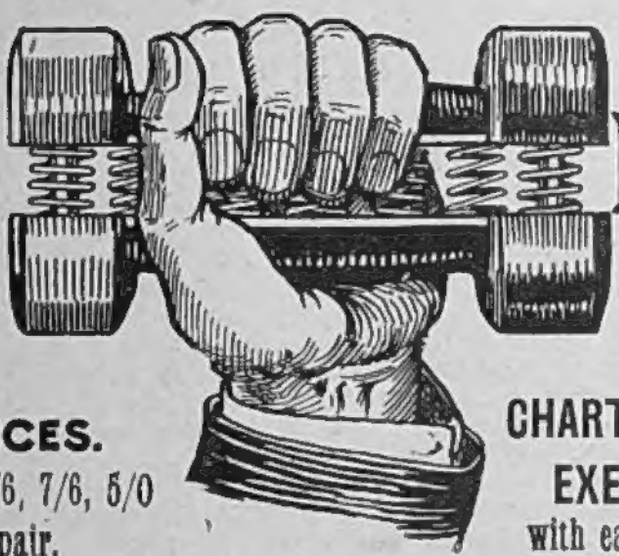
Apply **Sandow's Magazine** (Appliances Department)

131 Temple Chambers, LONDON, E.C.

SANDOW'S SPRING GRIP DUMB BELLS

FOR MEN & BOYS.

FOR LADIES & GIRLS.



PRICES.
12/6, 10/6, 7/6, 5/0
per pair.

CHART OF EXERCISES
with each pair.

THIS APPLIANCE IS VERY SIMPLE, and cannot go out of order. It consists of a Dumb-bell made in two halves, separated about 1 inch from one another, the intervening space being occupied by small steel springs, which may be of any strength, and easily removable to vary the resistance.

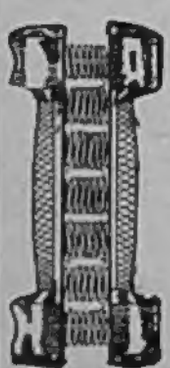
When exercising, the springs are compressed by gripping the Bells, and bringing the two halves close together, in which position they are kept until the exercise is over. They are suitable for all ages.

The pupil who possesses these Bells will find that instead of having to be continually buying heavier Dumb-bells, **One pair will suffice him for all time.** All that it will be necessary for him to do will be to purchase, at a small expense, new springs from time to time. All pupils are advised to use the **"Grip" Dumb-bell,** upon the merits of which I need not enlarge.

I have always taught that muscle is developed **by will-power,** not by mechanical movement, and the simple principle of this latest invention is, by calling forth a **continual Exercise of will-power, to obtain results impossible with any previous Dumb-bell.**

Yours faithfully,

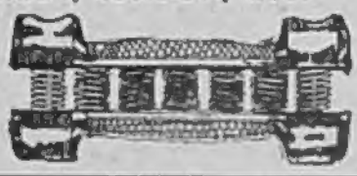
EUGEN SANDOW.



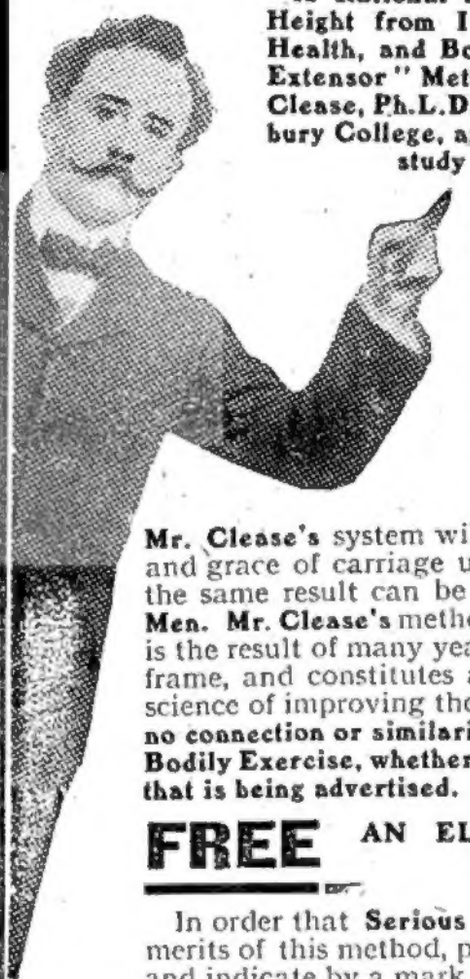
The Dumb-bells can be had from Athletic Outfitters, Sporting Goods Dealers, and Our Agents throughout the World, as well as direct from The

Sandow's Grip Dumb-bell Co.,

SANDOW HALL, SAVOY STREET, LONDON, W.C.



HOW YOU MAY BE TALLER.



A Rational and Scientific Method of Increasing Height from 1 to 2½ inches with added Strength, Health, and Bodily Beauty, by the New "Clease-Extensor" Method, the invention of Mr. F. Meredith Clease, Ph.L.D., late Director of Exercises to Haileybury College, and the outcome of 17 years' continual study of the Physical Side of Life.

The **"Clease-Extensor"** Method is the Rapid Culture of Physical Beauty with increased height by Novel and Natural Means. It is an original system of bodily movements which, adapted to individual needs, will, in the course of a few weeks, improve the **Personal Appearance** of a man or a woman 100 per cent., with the satisfaction of knowing that it is **Real** and **Natural** and not artificial and unnatural (a la fashion plate). **Mr. Clease's** system will give to **Ladies** a beauty of **Figure** and grace of carriage unattainable by other methods, and the same result can be assured for **Awkward** and **Ungainly Men. Mr. Clease's** method—the **"Clease-Extensor"** method—is the result of many years of continuous study of the human frame, and constitutes an absolutely **New Departure** in the science of improving the body by physical education. **It has no connection or similarity whatsoever with any other form of Bodily Exercise, whether it be for Health or Increasing Height, that is being advertised.**

FREE AN ELABORATE AND INTERESTING BOOK OF 64 PAGES.

In order that **Serious Enquirers** can sufficiently judge the merits of this method, please **Cut the attached Form** off page, and indicate by a mark thus **X** your **Physical Requirements,** and a set of **Selected Movements** prepared for you by **Mr. Clease** will be sent in the course of a day or two. Each movement is a **Photo from Life,** with instructions (covering a period of **Two Weeks**) that can be readily followed and understood by a child. **Mr. Clease** makes this offer in order to have his unique methods widely and quickly known, and will at the same time enclose an interesting **64-page Book,** fully illustrated, entitled, **"Why you are not Taller."** **All Correspondence is Strictly Confidential.**

F. MEREDITH CLEASE, Ph.L.D., 74, New Bond St., London, W.

CUT THIS OUT. 121.

Put a mark x against any of the following in regard to which you desire special improvement.

Too Short.
Round Shoulders.
Flat Chest.
Narrow Chest.
Stooping Shoulders.
Head Stoop.
Weak Back.
Weak Chest.
Protruding Abdomen.
Incurved Back.
Indigestion.
Constipation.
*Stomach Trouble.
*Lung Trouble.
Stunted Growth.
Ungainly Walk.
*Curvature of Spine.
Too Thin.
Superfluous Flesh.
Prominent Hips.
Thin Bust.
*Is your Figure or Health imperfect in any way not mentioned?
*Occupation.
*What is your age?

*Concerning these give full particulars in a letter. All correspondence is strictly confidential.

POST TO ME.

FREE TO ALL CYCLISTS.

Send us your name and address and you will receive by return, Free, Post Paid, our ***BIG ART BOOK,*** the finest ever published, which is of interest to every rider. This Book contains large handsome **Photo Engravings,** including beautiful country scenes, and describes every detail of the manufacture of a high-grade Bicycle with all the latest 1906 improvements; it shows you the difference between **high-class work** and cheap construction. You cannot afford in your own interest to be without it.

WITH THE FREE ART BOOK you will receive the most liberal and marvellous Bicycle offer ever made by any cycle manufacturer or dealer, explaining how we are able to send you a cycle, **guaranteed six years, packed free** and **carriage paid** direct from the factory for your inspection and approval **without one penny deposit;** how we can sell the highest grade Coventry cycles direct from the factory at less than manufacturers' prices; how we are able to let you ride the Cycle Ten Days and give it every **trial** and **test** you wish before your purchase becomes binding—all are fully explained in our latest proposition, which will be sent you free, post paid. Whether you are a cyclist or not, it will interest you. Write or call to-day. Open evenings till 9.

MEAD CYCLE CO. **Dept. 239A** **Liverpool:** 91, *Paradise St.* **London:** 19, *Charing Cross Rd.* **Glasgow:** 100, *Buchanan St.* **Dublin:** 167, *Brunswick St.* **Manchester:** 162, *Deansgate.*

Digitized by Google

Contents.

NOTES FROM MY NOTE-BOOK. By The Editor 65

MOUNTAINEERING IN GREAT BRITAIN 67

ARTICLETTES 72

EXERCISE OR INSANITY? By G. Elliott Flint 74

WHY YOU LOOK LIKE YOUR FATHER 75

PHYSICAL VALUE OF MILITARY TRAINING... 78

RESULT OF MARCH GOLD MEDAL COMPETITION 79

HOW WATER HELPS DIGESTION. By G. Elliott Flint 80

NOTES FROM NEW ZEALAND 82

IN THE ARENA OF SPORT 87

READERS' CLUB 89

THE MEN OF THE FUTURE 94

PEOPLE WITH IMAGINARY AILMENTS 95

OUR READERS' LIBRARY 96

New Publications.

INDIGESTION: Its Prevention & Cure
By F. Herbert Alderson, M.B.
A handy book of reference to advice given in a physician's consulting room. Advice as to Diet for Dyspeptics.

DIET & HYGIENE for Infants.
By F. Herbert Alderson, M.B.
How to bring children up through the first year of life, and how to guard against infantile complaints, etc.

Price 1s. each. Postage, 2d. each extra.
Apply SANDOW'S MAGAZINE Book Dept., 131, Temple Chambers, London, E.C.

DELICIOUS **COFFEE.**

RED WHITE & BLUE

For Breakfast & after Dinner.

Build up your muscle

on good food.

Plasmon

Plasmon Cocoa

Plasmon Chocolate

Plasmon Oats

Ask your Grocer.

Wicksteed & Palmer,

SPECIALISTS in——

MUSCULAR PHOTOGRAPHY.

Great difficulty is experienced by many amateurs in obtaining good photos of their development.

Messrs. Wicksteed & Palmer having for the last seven years made a special study of **Athletic Portraiture** can guarantee every satisfaction.

Apply for Terms to—

WICKSTEED & PALMER,

——**109, Cheapside, E.C.**

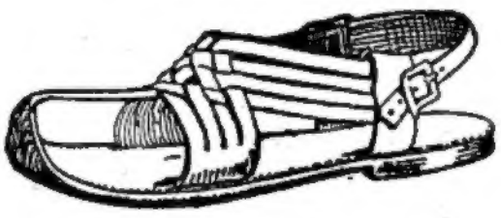
Or at their North London Branch:

169, HAMPSTEAD ROAD, N.W.

HYGIENIC FOOT WEAR.

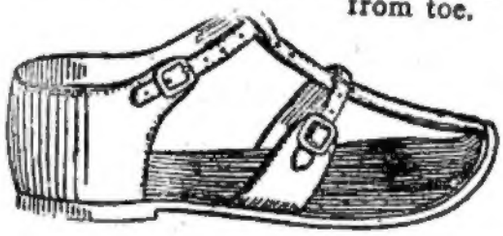
THE HUMAN FOOT should NOT be bound up in Boots more than possible. Many of our readers who could not wear SANDALS whilst pursuing their daily occupation would derive great benefit from their use in leisure hours. We have selected a few patterns, made in best Brown Calf Leather, which should fulfil all requirements.

The CASHMERE.



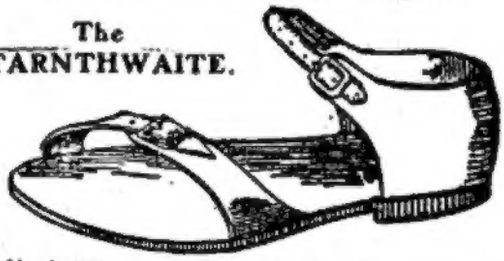
Ladies', sizes 3 to 7, 8/- per pair.
Men's, sizes 5 to 10, 9/- per pair.

The STARNTHWAITE, with strap from toe.



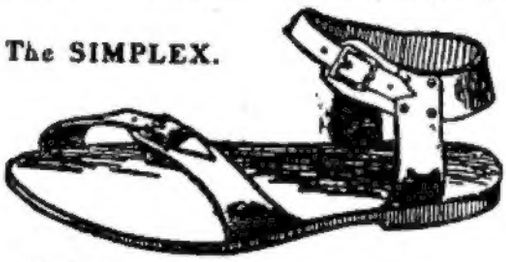
Ladies', 7/6 per pair. Men's, 8/6 per pair.

The STARNTHWAITE.



Ladies', 7/- per pair. Men's, 8/- per pair.

The SIMPLEX.



Ladies', 7/- per pair. Men's, 8/- per pair.

To ensure a perfect fit it is necessary to send an outline of both feet: this should be done by drawing a line round the bare feet on to paper whilst holding the pencil erect.

SANDOW'S MAGAZINE CO., 131, Temple Chambers, LONDON, E.C.

Digitized by Google

(Est. 1898). VOL. XVII. No. 3. JULY 19, 1906.

SANDOW'S MAGAZINE

... OF ...

PHYSICAL CULTURE.

Editor: EUGEN SANDOW.
Assistant Editor: FRANK PINK.

MOTTO:—*Mens Sana in Corpore Sano*—A SOUND MIND IN A SOUND BODY.

NOTICES.

ADDRESS.—131, Temple Chambers, Temple Avenue, London, E.C.
Telephone: 3436 Central.
NOTICE.—Business Letters should be addressed to the Manager, Editorial Letters to the Editor. Cheques, Money Orders, and P.O.'s should be Crossed "London and County Bank."
PUBLISHING DAY.—Every Thursday.
SUBSCRIPTION.—Annual Subscription, 10s. 6d.; Half-year, 5s. 6d.; Quarter, 3s.
EDITORIAL.—I am always pleased to receive Contributions, Literary and Pictorial, for consideration. Where payment is desired, the Contribution must bear note of amount required. Prompt consideration will be given and an early reply forwarded.

NOTES FROM MY NOTE-BOOK.

BY THE EDITOR.

Year by year the value of the labourer to the State is being recognised, and his physical and mental comfort is being more thoughtfully studied. I have just been reading the annual report, running, by the way, into 400 pages, on factory and workshop inspection in 1905, and it is, to my mind, a far and away more interesting document than the most thrilling work of fiction. Its pages show that much yet remains to be done to safeguard the health and lives of those humble and heroic toilers who have built up and are still building up the commercial prosperity of this country. Some of the figures, indeed, burn into the mind, and reveal a really sad state of affairs.

o——o

It is intensely pathetic to realise that in 1905, over one thousand people employed in workshops and factories alone were killed while engaged at their daily labour. The number of serious accidents that were reported reached the enormous total of 100,609. Then, again, an even sadder feature of the report is a table dealing with the employment of young children. In 1905, the number of children and young persons examined by certifying surgeons for employment in factories was no less than 361,578. How many of these young souls passed upwards in the smoke of the factory chimneys during that time! How many of those who remain will develop (it seems ironical to use the word) into poor, stunted, ailing specimens of humanity to swell the ranks of the degenerates?

o——o

The lot of the poor little half-timer is one of the hardest in the realms of toil. Teachers in Lancashire have described how these prematurely-old youngsters often arrive at school after a hard morning's work in the factory, utterly worn out, and able only to fall asleep at their desks. Lancashire alone last year put on 23,185 half-timers under 14 years of age. Yorkshire put on 9,787, and the

Digitized by Google

United Kingdom, as a whole, put on 41,160 of these child workers. Of the 361,848 children certified as fit for the factory and the workshop, 41,160 were half-time workers under 14, 74,056 were full-timers from 13 to 14, and 246,632 were full-timers from 14 to 16. The year showed an increase of 28,388 child workers, a fact which demands the earnest attention of the nation.

o——o

The whole system of factory and workshop inspection itself wants remodelling. This Blue-book shows that nearly 260,000 establishments of this sort are now on the registers, and yet there were at the end of 1905 only 118 inspectors and 36 assistants. As several of the latter are really only clerks, there were 146 persons charged with the duty of inspecting and reporting upon 260,000 registered workplaces, to say nothing of the duties connected with out-workers, and such-like. It is too ridiculous to believe that one inspector can conscientiously overlook 1,800 factories, even to the extent of visiting each only once in a year.

It is, however, some compensation to learn that the number of prosecutions is on the increase, a sign of increased vigilance on the part of the officers.

o——o

What a pity it is that employers themselves do not see that it is but a short-sighted policy to neglect the bodily welfare of their workers! The get-rich-quick mania completely dulls many of them to all feelings of humanity. It is even worse in America, if one is to judge from Foster Fraser's book, "America at Work." Describing the great locomotive works of Baldwin's, he says: "I saw fourteen thousand men at work; I saw many grey hairs; but I saw no old men." They are all killed off in the fever of American hustle, and perhaps it is better that they should so die than live to an old age of penury and neglect. But the country that pursues such a policy is bound to pay a heavy penalty in the long run.

o——o

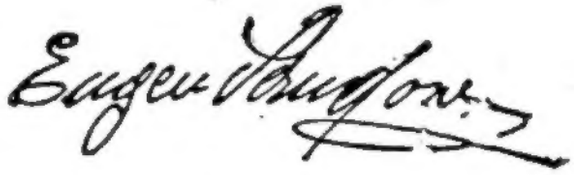
The burden of insanity, crime, and disease will be trebled. The population will dwindle, and the physique of the people deteriorate. A nation engrossed in a mad struggle for money will lack the muscle and sinew that will be wanting when a still sterner struggle for existence may be necessary. Besides, is it not a sad thing when, among all the arts of life, a country fails to learn the art of living? In the book referred to, the author says he asked one employer of labour "Where are your elderly workmen?" The author asked three times before receiving a reply. At the third time, the employer opened his cigar-case. With a careless smile he said, "Have a smoke, and we'll take a car ride along to the cemetery."

o——o

The editor of *Pearson's Magazine* is doing a valuable public service by grappling each month with some social evil that tends to degeneration. In the current issue, he tackles the cigarette habit in vigorous fashion. It is terrible to learn that over one hundred million cigarettes are sold weekly in penny packets alone, the majority of the purchasers being boys and young men. The chief cause of unfitness among boys is smoking, and I hope soon to see Dr. Macnamara's Bill against juvenile cigarette-smoking passed into actual law. In Yale University careful comparisons were made for eight years between smokers and non-smokers. As compared with the smokers, the non-smokers gained 24 per cent. in weight, 37 per cent. in height, 42 per cent. in girth, and 8.39 cubic inches in lung expansion.

o——o

In wide-awake Japan, no person under twenty years of age is allowed to smoke, parents, guardians, and shopkeepers being liable to fines of varying amounts. Forty-seven out of the fifty-three States of America prohibit juvenile smoking. It is time that we in this country should do likewise.



Digitized by Google

MOUNTAINEERING IN GREAT BRITAIN.

A Holiday Sport for the Strong and "Nervy."

MOUNTAINEERING is essentially a modern sport. Although the Greeks and Romans regarded athletics and games as a necessity for all fully furnished men, and have handed down to us the essentials of many of our sports, no one has suggested that mountaineering ever entered into their thoughts. Nor, indeed, did our immediate ancestors even faintly realise the possibilities of mountaineering as an exercise bringing health and strength in its train. We cannot, however, be surprised at this. In mountainous countries the valleys were doubtless peopled with hardy races, but nowhere do we find that either curiosity or ambition led them to penetrate beyond the pastures or forests furnishing food or timber, and to ascend the rocky summits above. Besides a lack of incentive, a plentiful hedge of fables encircled the mountains with an awful fence. Here if anywhere on earth must be the haunt of goblins. As the rocks, loosened by frost or water from the parent cliff, hurtled down through meadow or forest into the peaceful valley, the affrighted inhabitants, ignorant of the great forces of nature, only saw in them the undoubted evidence of a superhuman race inhabiting the mountains and wreaking insensate fury on the dwellers below. Hence, we find legends of mountain goblins who in their wild feuds tore up rocks and cast them hither and thither. Even in our Scottish Highlands to this day there lingers a hardly spoken fear of the "old man of the mountains." In many a lonely corrie the resounding echoes may be wakened by the crash of falling rock, or the rocks magnified into the form of giant beings when seen through the medium of a misty veil. Quite recently the writer, while photographing on a Highland Ben, was suddenly enveloped in mist. Peering down into the boiling cauldron of cloud that rolled up from below he was startled by the apparition of a stupendous pinnacle of rock apparently hundreds of feet high, and leaning over like some giant student wrapped in meditation. Here was something quite unique, and the continuance of the mist was the more aggravating in that it prevented the recording of it in a photograph. But, suddenly the clouds lifted, and in the brilliant atmosphere the giant pinnacle shrunk incredibly, and proved to be not more than five feet high.

THE ORIGIN OF MOUNTAINEERING.

Mountaineering, however, did not spring into existence as a sport. It had its first beginnings either in the love of the beautiful or in the desire for knowledge. In the middle of the eighteenth century tourists resorted to Switzerland, but it was not till Saussure, the great naturalist, offered a reward that men began to attempt the ascent of Mont Blanc. In 1786 the first complete ascent was made, and soon thereafter Saussure accomplished the expedition himself, and made scientific observations. Since that time mountaineering has made great strides, both at home and abroad.

MOUNTAINEERING DEFINED.

It is perhaps time that I should define mountaineering, so that the exact scope of this paper may be narrowed. It is evident that mere love of the mountains can in no sense be called mountaineering. Nor can it be admitted that the ascent of a mountain is in itself mountaineering. The tourist who ascends Snowdon by rail, or who reaches the ice world above Zermatt by the same means, is still essentially a tourist; one who enjoys the beauty of Nature, no doubt, but not a mountaineer. To mountaineer involves personal exercise, and that on a mountain. At first men endeavoured to reach the summit of mountains by the easiest route, and felt repaid if the view was beautiful, grand, or extensive; but it was soon found that in order to enjoy the view or the scenery *en route* one must be at least not over fatigued. Even the most enchanting outlook falls dead

on the person who has over-exerted himself. Hence arose the need for training and preparation. When we read the accounts of early mountain ascents we are struck with the difficulties that persistently assailed the climber—mountain sickness, frostbite, and the like. It is now possible, with the advantage of the experience of the past, to attribute many of these difficulties to insufficient training or to errors in food or clothing. But climbers could not always be in the Alps, and accordingly they began to look in our own tight little island for opportunities of carrying on what had become entitled to be regarded as a sport.

BRITISH MOUNTAINEERING.

British mountaineering, then, may really be considered as having had its origin in the efforts of Alpine climbers to perfect themselves and keep themselves in training by climbing at home. It is due to the Alpine Club, with its headquarters in London, that Alpine climbing passed through its infantile stages, and became firmly footed as a scientific sport with rules and principles. It is no less true that to this parent club we owe the rise of British mountaineering. The essential difference between hill-climbing in Britain and mountaineering in Britain is that the former may be looked upon as a sort of "go-as-you-please" climbing—where each man take the easiest route for himself, without reference to the interests or safety of the others in the party. In mountaineering, however, the sport is taken in a serious sense, and the same rules are followed as would be applicable in an Alpine ascent under similar conditions. Hence it comes about that the ascent of British mountains by any of the difficult routes is undertaken precisely with the same precautions as are observed in similar expeditions among the Alps. The ice axes and ropes and nailed boots are equally necessary in Great Britain, nay, more necessary, for in Switzerland hundreds of trained guides are ready to take even the inexperienced novice up dangerous peaks, provided he has endurance—and money to pay them with. In Britain, on the other hand, guides are almost unknown, and the climber must rely on his own skill or that of his friends.

DIFFICULT ROUTES.

But the question may be asked: Where in Britain do there exist mountains, the ascent of which can be called mountaineering? Before answering this question, it is necessary to say a few words regarding the evolution of mountaineering. We have already seen that, at first, when people began to climb mountains, it was for the view only. Gradually men recognised the benefit of exercise apart from the view. Then they wished to ascend some mountain, which, even by the easiest route, requiring agility, rock climbing, and a cool head. Having accomplished this, the new-born skill began to pit itself against routes which before were regarded as impossible. Gradually conquering the difficulties, men looked out for more and greater difficulties, till at last the desire was to climb *by the most difficult* route. Then came the study of every rocky face, and the sport developed to its modern phase.

THE MOTIVE OF THE MOUNTAINEER.

It must not, however, be argued from this that the highest or latest type of mountaineer is a mere gymnast, whose sole delight or anxiety is to climb rock or ice difficulties, which baffle his neighbours. This is only one out of many types, and we would rather define the mountaineer somewhat as follows:—He is a man (or woman) who climbs mountains because he loves them; because there he sees God's earth in its noblest and purest aspects; because in the mere exercise he finds his body renovated to the greatest extent; his brain freed from cares of business; his eyes and ears enriched by the sights and sounds of Nature. Moreover, he takes the sport seriously, and by accustoming himself to overcome difficulties and to keep control of his nerves in trying circumstances, he is in the best condition to enjoy the grandeur of the scenery, unaffected by fatigue or the dangers of the route.

THE CHARACTER OF THE CLIMBS.

Fortunately, Great Britain is well furnished with training grounds for the mountaineer. It is true that not many of our mountains are difficult by every route, but on the other hand precipices exist in

superabundance, and on these may be found climbing routes which present difficulties ranging from the moderate to the impossible. Then, again, in winter and indeed far on into spring, our mountains, more especially those in Scotland, are heavily coated with snow and afford excellent training. British mountaineering in winter affords, then, a near approach to Alpine conditions, with, however, marked differences. In England and Wales, owing to the lower altitude and the milder winters, snow does not accumulate to the same extent, but, nevertheless, the ranges of Snowdon and the Lake district often present Alpine difficulties. It is, however, with the Scottish Highlands that the writer is chiefly acquainted, and there opportunities for snow craft are numerous. The large upland mass known as the Cairngorms holds by far the greatest amount of snow in the British Isles. There no less than nine of the peaks exceed 4,000 feet, viz.: Ben Macdhui, 4,296; Braeriach, 4,248; N. Ben Macdhui, 4,244; Cairn Toul, 4,241; S. Braeriach, 4,149; Sput Dhearg, 4,095; Cairngorm, 4,084; Sgor Coire an Hochan, 4,036; while other seven exceed 3,800 feet.

In late seasons this snow increases in depth even to the middle of May, and the great gullies remain filled far on into the summer. Owing to the formation of the mountains — frequently plateaus with abrupt precipices—huge *cornices* are met with, and present serious obstacles to those climbing up the precipitous face.

A SNOW CORNICE.

A *cornice* is an overhanging mass of hardened snow or ice which projects from the top of a mountain over a slope which may be either rock or snow. Sometimes these structures are of immense size, 20 to 40 feet thick, and overhanging to the extent of 8 to 12 feet. From the projecting lip, huge icicles frequently depend, enhancing the formidable appearance. On more than one occasion climbers have been forced to tunnel through the *cornices*, a feat which is of course only possible when the snow is in good condition. In spring and early summer huge avalanches occur as the *cornices*, weighing hundreds or perhaps thousands of tons, break off and fall down the cliffs. It is rare that true ice slopes are met with in Britain, but frequently after a thaw or rain with a change of wind to the north, steep snow slopes are converted superficially into ice slopes, and step cutting is a *sine qua non*.

THE ICE AXE.

The ice axe is used in all winter expeditions and enables the climber not only to cut steps or to anchor himself, but also to descend snow slopes glassading in a standing or sitting position. Without the ice axe this would be impracticable or dangerous. As the angle of the snow in many gullies rises to 50 deg. or 60 deg., or just below the *cornice* even to 70 deg., climbers are invariably roped together, and the greatest precautions are taken to prevent a slip. Although there are no glaciers in Britain, yet the moistness of our climate produces icy conditions, which in themselves may be quite as difficult as those generally met with in the Alps. Thus the rocks may be coated many inches thick with transparent ice caused by the freezing of water as it flows down, or, still more dangerous, they may only have a thin coating, too thin to admit of steps being cut, and thick enough to cover up every hold. At other times the moist air deposits ice on everything it touches, and ice grows at a marvellous rate on rocks in the form of white lance-like crystals.

CLOTHED IN ICE.

On such an occasion, which is a very frequent one in winter, the climber is speedily coated with ice—his hair and clothes especially forming a nucleus on which the ice grows. It is no uncommon thing for balls of ice to hang from the moustache and beard, and for a layer of about one inch of ice to form on the clothes. It will be seen from this that winter climbing in Britain is a much more arduous and heroic business than the usual summer expeditions in the Alps, and the pages of the *Scottish Mountaineering Club Journal* teems with accounts of thrilling experiences which show that it is not necessary to go far from home in order to enjoy the excitement of climbing the mountains of the

snow. It is alone due to the extraordinary care taken, in the absence of professional guides, that the Scottish Mountaineering Club points with pride to the absence of any serious accident among its members.

ROCK CLIMBING IN BRITAIN.

The Lake district of England has for many years been the standard for rock climbing. There the most daring and agile of Britain's sons have gathered to pit their powers against the difficulties of the precipice, pinnacle, arête or gully. Consequently, each climb has become more and more specialised as a more difficult variation has been added by successive climbers, until it is now said that practically nothing more remains to be done. The result of this is that the standard of the most difficult climbs is such as no one but the most skilled dare attempt. It may be safely said that only in very exceptional places in the Alps is the same rock-climbing skill required as would be necessary in climbing the most difficult "Lake Climbs." In Wales, also, there are many climbs of recognised difficulty, but if we would enjoy the charm of breaking new ground and making first ascents, then assuredly Scotland holds the premier place. There, the standard of difficulty is lower than in the Lakes, but this is solely due to the vast extent of climbing ground, and not to the absence of difficulties.

THE PLAYGROUND OF THE MOUNTAINEER.

Unlike the Lake district, Scotland is but a recent playground for the mountaineer. It is true that some members of the Alpine Club visited the Island of Skye many years ago, and drew attention to the magnificent ridges of the Coolins as a training ground for climbers, but it was not till the formation of the Scottish Mountaineering Club in 1889 that Scotchmen began to realise what a heritage they had in their mountains. It is interesting to scan the pages of this Club's Journal from the beginning, and to notice how an increasing proportion of the climbs described have gradually risen from what might be called "Hill Walks," through "Climbing Routes," to "Difficult Climbs," and no better exemplification of this can be given than the Journal for September, 1902, which was practically given over to a monograph on Ben Nevis, profusely illustrated, and gave in detail particulars of the ascent of that mountain by every conceivable route. The *Scottish Mountaineering Club Journal, in* short, from its commencement, contains practically all that is known about Scottish Mountains. Whatever else there is will be found in the journals of the Cairngorm Club, Yorkshire Ramblers, Climbers' Club, and last, but not least, the Alpine Club.

SCOTTISH SNOW-CLAD MOUNTAINS.

In the limited space of this paper, it is, of course, impossible to do more than indicate the most important rock-climbing centres in Scotland. The Coolins in the Isle of Skye afford the finest climbing in the British Isles. Consisting of Gabbro, a volcanic rock of extraordinary hardness and roughness, they form narrow ridges of, in places, wall-like sharpness, and afford the maximum amount of sensationalism in their apparently impossible pinnacles, gullies, and cliffs. Owing to the splendid rock, it is possible to climb with safety at an angle which on other rock would be impossible. Ben Nevis stands next from a climbing point of view. On its northern face, it falls in steep precipices to a depth of well-nigh half a mile, and as this is intersected with gullies, ice or snow-filled even in summer, and the summit itself is more or less covered with snow from September to June, there is here a combination of snow and rock-climbing which is of the highest order. The Glencoe Mountains, with Buchaille Etive, consist, like Ben Nevis, of excellent porphyritic rock. Buchaille Etive is walled on the North and East by a series of rugged buttresses, one of which, the "Crowberry Ridge," is reputed to be one of the most difficult, if not the most difficult climb in Britain. Bidean, the highest in the Glencoe peaks, possesses its "Church Door," the ascent of which was only accomplished after several years of futile attempt. Probably Lochnagar may be considered the most consistently dangerous mountain, and the great Corrie there is walled round by cliffs which have only been twice climbed. Perhaps the most popular peak in the Cobbler, near

Arrochar; but who can sum up the relative hosts of Ross-shire, Inverness-shire, and Sutherlandshire, where succeeding generations of climbers may hope to accomplish first ascents for many years.

EDINBURGH'S PRACTICE GROUND.

One climbing ground which can hardly merit the appellation of a mountain, is the Salisbury Crags, Edinburgh. All visitors to that famous city know Arthur Seat and the rugged range of precipices easily visible from Princes Street. The ascent of these cliffs is now made by no less than 35 different routes, and though the actual height is small, not more than 80 to 100 feet, yet the difficulties are great, so that any one capable of leading up all of these ways, and finding them easy, must indeed be a very prince of climbers.

Having now taken a general survey of the origin and evolution of mountaineering, its rise in Britain, and the nature and variety of the sport available in this country, we may sit down, as it were, on some mountain summit, and ask "What good is it all?" The eager climber has a hundred replies on his tongue, each of which is to him convincing, but how is the sceptical townsman to believe that an exercise so arduous, and apparently so dangerous, is worth his making an effort to enjoy? The argument may be divided into various sections:—

EFFECT OF CLIMBING ON THE MIND.

We all know nowadays that the brain, like the muscles of the body, requires rest. The brain-worker requires periodically to leave his brain fallow, to alter the current of its thought, in order that when the subject is again taken up, he may attack it with renewed energy. To this end golf, cricket, football, cycling, and the various kinds of holiday-making are resorted to, to distract the wearied mind from worries, or problems, or business cares. It will be at once realised that the climber, perchance, forcing his way step by step up some ice-filled gully, or with strenuous effort triumphing over the difficulties of a steep rock face, has no thought of the cares which at other times sorely encumber him. Concentration is an absolute necessity in climbing, and all testify to its absorbing character.

EFFECT ON THE POWER OF OBSERVATION.

No one who has not ascended a mountain can have the slightest idea of the scenery and objects which present themselves. The first thing that strikes him is the evidence of destruction that is everywhere around. Great rock precipices which from below seemed absolutely unbroken, are now seen to be seamed with cracks, and to present a variety of ledges and pinnacles hitherto unsuspected, and if the *debris* of crags or broken rock at the foot is not sufficient, he will learn from the crash of falling rocks that change is always going on. Moreover, he will soon notice that different kinds of rock assume different shapes, and that the ability to climb is greatly dependent not only on the rock, but on the direction of the strata. In short, he is soon introduced to geology. On every ledge is a tiny botanic garden, where Alpine flowers remind one in autumn of the lower ground in spring, and botany comes in to interest and ennoble. As he looks back from some giddy height he sees the faint wreath of mist gathering below him, merging into a dense cloud and blotting out all from view. Soon, perchance, the storm rages round, and as the foaming cataract leaps from crag to crag, he sees the sculpturing of Nature into gully, and chimney, and pinnacle. The wind changes and Nature crystallises in sparkling ice, every blade of grass a fairer spear, and the clouds below reflecting the sceptre of the Brocken. The sun comes out or perhaps sinks behind the distant island girt by a golden sea. Nature in all her aspects claims and receives observation.

(*To be continued.*)

Nature's Heart Developer.

The heart is a hollow muscle, which, like all other muscles, may be developed and strengthened by exercise. Walking, running, and mountain-climbing are good heart developers.

Of course, one who has a weak heart must begin with a very small mountain, gradually increasing the pitch and height of the climb as the strength permits. A short walk on an easy gradient may be all that is wise at the start.

In such cases, advises *Good Health*, the exercise should be prescribed and regulated by one who has carefully examined the heart.

*

ARTICLETTES.

Nervous Prostration

Dr. Thomas F. Rumbold, in a paper on this subject, attributes the nervous prostration commonly attributed to "overwork" to chronic nasal inflammation, the most potent and frequent factor in the production of which he asserts to be the result of excesses of alcohol, tobacco, venery and "colds" induced thereby. These practices, he says, increase the congestion of the nasal mucous membrane, producing a tendency to "colds," and since the blood supply of the upper two-thirds of the nasal passages—the anterior or posterior ethmoidal cavities, the sphenoidal cells, and the frontal sinuses—is derived from within the cranium, the vascular paresis, commencing at the periphery, gradually travels to the brain vascular system, and the author holds that this disturbance of the cerebral circulation is the real reason of the irritability of temper, inability to hold the mind continuously on a definite subject, sleeplessness, forgetfulness, desire for change and excitement, accompanied by physical exhaustion and loss of ambition, which are commonly attributed by the physician to the continuous application of the mind to business and professional duties.

Rough on the Teetotalers

The advocates of water as a beverage in Bradford are keeping very quiet just at present. The badly decomposed body of a suicide has been taken from one of the reservoirs which supply the city with drinking water. At the inquest Mr. Watson, the engineer to the Bradford Waterworks, expressed the opinion that the water was not rendered unfit for drinking by the accident. The reservoir contained 1,240 million pounds of water, while the body of the man weighed, say, 140 lbs. The relative proportions of the body and the water obviated any risk, and if the reservoir were emptied there would be a loss to the ratepayers of £3,725.

The point raised is an important one, for it is by no means an uncommon thing for persons to commit suicide by drowning in reservoirs, and frequently the bodies are not recovered until they are much decomposed.

A distinguished member of the Society of Public Analysts told a representative of the *Daily Mail* that he was decidedly of opinion that it would be better that the water should not be used, and that the Bradford ratepayers should put up with the £3,725 loss.

"If the water is drunk there would certainly be some risk of ptomaine poisoning. Ptomaines, which are actively toxic, are the product of the action of bacteria, and are commonly present in decomposed animal matter. But while bacteria are insoluble, and would therefore be removed by efficient filtration, ptomaines are soluble, and could not be kept out of the water as supplied to the consumers.

"The argument that there is no risk of contamination because of the enormous disparity between the weight of the water and the weight of the body is, I think, very faulty. The assumption here is that the products of decomposition would be equally diffused in the water, and thus become practically innocuous. But they would not be so diffused. The water in the neighbourhood of the body would probably be highly contaminated, and the rest might be almost free."

Meanwhile, the water in the reservoir is being used.

Vegetarians in Conference.

Experience meetings, in which converts give account of their spiritual awakening, have long been a feature of religious revivals; but an experience meeting in which speakers should tell of digestive disturbances and dietary conversions was the startling novelty introduced by the Women's Vegetarian Union in connection with their annual gathering.

Mrs. Despard, the president of the union, was in the chair. She spoke as a vegetarian of twenty years' standing. However, she admitted that she had little experience to give, for she had never been ill either before or after her adoption of a vegetarian diet; but she urged that she had met many children who had been vegetarian from birth, and they were the healthiest she had ever seen.

More striking testimony was given by Miss Lind-af Hageby. She had been a vegetarian six years, and during that time she had never seen a doctor, in spite of the fact that during some three months when she first began vegetarianism she had to live mainly on potatoes and horse-radish. Before she became a vegetarian she was constantly ailing, and was declared to be dying of consumption.

The economy of a vegetarian diet was urged by Dr. Stenson Hooker. He had found that though formerly he needed a meal every four hours, now he could dispense with the midday meal altogether, which saved both money and time. Further, he found he could do more work both mental and physical on a light diet.

Proved an Advantage.

An English doctor residing in China was called to attend a young native actor whose leg was in a bad condition from careless treatment. The foot had been amputated, and the wound neglected.

The medical man, however, amputated the man's leg. To the surprise of those interested in the case, the actor was ready to resume work in a few weeks. The doctor fitted him with a new leg, which proved a veritable blessing in disguise.

He at once undertook a part where his leg was knocked off, to the horror of the audience. After

the apparent accident he was carried off the stage, and presently reappeared, walking as well as before.

The Chinese are unfamiliar with artificial legs, and each time the dramatic incident occurred they regarded it as nothing less than a miracle.

Circulation of the Blood.

Much importance has been attached to the circulation of the blood in the phenomena of attention, and a well-known scientist is among those who investigated the movement of the blood in the human brain, showing the mechanism by which the afflux of blood to the brain is increased during attention. He convinced himself that the blood is not the first and most important factor in psychic activity. The brain cells contain substances sufficient to provide for the operations of consciousness without there taking place any sudden modification in the afflux of blood. His observations of persons in sleep who had an aperture in the cranium showed him that consciousness is established before any alteration takes place in the circulation of the blood within the brain.

Sleep.

It is astonishing that we should know so little about the mysterious state in which nearly one-third of our life is passed.

Even the few writers who have concerned themselves with the subject of sleep have confined their attention almost altogether to its physiological phenomena. Having told us that the brain needs rest and sustenance, that in sleep all the vital processes are retarded, that the first sleep is deepest; having described the premonitory symptoms, and having acquainted us with other uninteresting facts of the same order, these persons seem to think they have told us all we are entitled to know.

The question what is sleep, or why it is necessary that the soul should be unconscious for six or eight hours out of every twenty-four, does not appear to occur to them, possibly (the *Spectator* thinks) because these are questions that cannot be answered.

The Role of Salad.

There is no more agreeable or refreshing addition to a cold meat collation, especially in the fine warm days of summer, than a well-made salad.

It is the experience of a good many persons that the appetite becomes lessened by the sight of food, and more particularly of animal food, on a hot day, and that this is not so much the case when it is accompanied by a fresh green salad, which not only renders the outlook of a meal attractive, so far as regards the palate, but encouraging also to the digestive organs.

When there is no inclination to eat or when, as it is commonly said, a person does not "fancy" his food, there is, as a rule, torpidity of digestive function. With the sight of tempting food, adds the *Lancet*, the work of the digestive organs is begun.

A Fine Photo Study of the Editor.

EXERCISE OR INSANITY?

Future Man an Imbecile unless his Physical Strength keeps pace with his Mental Growth.

By G. ELLIOTT FLINT.

WE hear the question, What is the use of strength? repeated *ad nauscam.* It is insisted that what we need most is quickness and activity. But one might reasonably ask, What is the use of great quickness and activity? From the modern viewpoint we have as little need of them as of strength. And we might go further in this kind of reasoning and say that big legs and lungs are not a present requirement. Nowadays we do not have to climb mountains, and we may ride in cars to our offices.

DANGER OF LOCAL DEVELOPMENT.

As a matter of fact, the acquirement of general strength, and of activity and quickness, is well worth while beyond their practical utility. For, when one is active and wholly strong, one is healthy; and, certainly, health is most desirable. It is true that some strong men are not healthy, but their ill-health is always due to the weakness of some part; such men are not entirely strong. It is possible to develop the muscular system piece-meal by localised work which involves the organs but little; the organs, consequently, remain weak, although the man appears to be strong. Muscular work should, therefore, be general; that is, should involve many muscles at once, when the organs will necessarily develop equally with the muscles. And, in this connection, it is important to remember that the organs, upon whose strength and integrity life directly depends, can be developed only through general and vigorous muscular work.

Someone has drawn a graphic picture of future man, representing him as having a very large head with a puny body and shrivelled limbs—hardly a pleasant prospective. The fact that a large brain will need much good blood, which can be furnished only by a sound and robust belly, this prophet seems not to have considered.

How a localised exercise will develop a few muscles without, at the same time, developing organs, may be shown thus: Suppose a man repeatedly "curls," by alternately flexing and extending his forearms, two moderately heavy dumb-bells. He will notice that the exercise will swell his arm muscles with blood, thereby developing them; but it will not much increase the force and frequency of his heart-beats, nor will it cause breathlessness; which proves that his two most important organs, the heart and the lungs, do not participate to any great extent in the exercise, and, consequently, his muscles alone will benefit. Now, on the other hand, if he performs some exercise involving vigorous contractions of great muscular masses—if he runs, for example, or wrestles—either of these exercises will cause his heart to beat much more powerfully than it does ordinarily, while his lungs must work nearly to the limit of their capacity to supply sufficient oxygen to the many big working muscles, and to get rid of the immense quantity of carbonic acid formed by their combustion. That is to say, the very general exercises of running and wrestling will oblige the organs to work fully as hard as the muscles, and hence will develop all nearly equally.

The idea that we do not need strength is manifestly absurd, for, as I have already insisted, if we do not possess strength we cannot remain healthy, and if we are not healthy we cannot live long. Setting the advantages of physical evolution aside, so long as the brain needs food for its development and the food to be digested needs a good stomach, and the stomach to remain good needs proper exercise of the muscles, so long will the cultivation of physical strength be necessary for mental evolution. And the above is true in spite of the fact that latterly, while physical strength has been retrograding, mental evolution has been making great strides, for not yet has our body recession been sufficient seriously to affect the brain's nutrition. A time will come, however, when, if this one-sided development continues, the brain will no longer be adequately nourished by the

enfeebled body, and then will occur mental retrogression. Hence, assuming that we go on as we have, we may expect at last not the super-intellectual man with a huge brain and a shrivelled, puny body, that has been predicted, but a small creature possessing a brain strictly proportioned to his diminished powers of nourishment.

Still more clearly to understand how strength, which is the result of exercise, produces health, one needs but to consider that when muscles and organs are exercised many of the cells of which they are composed are destroyed and excreted, while new cells take their place and new tissue is obviously more vigorous and healthy than is old tissue. Exercise necessitates deep breathing and, by accelerating the circulation, it also necessitates a thorough elimination of effete matter from the brain and system generally.

Regarding the relative value to health of light and of heavy exercises—because moderately heavy work produces a more intense combustion of tissue, and therefore a more thorough renewal than does light work—the vigorous exercises, after one has become gradually accustomed to them, conduce to a more robust health. Again, the intense combustion resulting from moderately hard work necessarily will exercise the heart, lungs, and the various excretory functions—a result not obtaining in a like degree from light exercise. And, finally, vigorous exercise renders both muscles and organs harder, more compact, than does light exercise, when they will resist more successfully disintegration, disease, and death.

The notion that hard general work, resulting in full muscular development, saps vitality, weakens the organs and is a wearying incubus to the individual, is so illogical as hardly to deserve an answer. But some persons believe this. Such should pity the wild animals that, guided only by an instinctive physiological lead, run, jump, pursue, and wrestle with one another, thereby using and developing fully their whole bodies. Strange it is that they are singularly free from disease, while man, who knows better than to do those things, is the most disease-ridden creature in existence.

WHY YOU LOOK LIKE YOUR FATHER.

How you got Mamma's Dimple or Grandpa's Nose.

A Remarkable Establishment in the Study of Heredity and Evolution.

WHY do you look like your father?

What is the reason back of that persistent family trait which finds its latest expression in the shape of your little boy's nose, exactly like his father's and his grandfather's?

In what way are you to account for the circumstances that one of your twin cousins has turned out a black sheep, while the other is a young man of most exemplary behaviour? Why has Sister Jane got hair like Aunt Mary? Why has the baby grandma's eyes?

The most wonderful establisment in the world—in some respects, at all events—is the Carnegie Station for Experimental Evolution, located on Long Island, in New York State. It is a scientific plant, set up on an elaborate and costly scale, to find the answers to all these questions and kindred problems and to study the science of heredity.

A thousand such questions like those above might easily be suggested by your own experience and observation. They make a not unimportant part of the great mystery of life, and, if an intelligible answer could be made to them, a vast benefit and much satisfaction would be conferred upon mankind. For these are problems which have intimately to do with the successful breeding of domesticated animals, with the improvement of food-plants, and, last, but not least, with the perpetuation of mental attributes, physical peculiarities, virtues, vices, and other characteristics in human beings, through inheritance.

Among human beings mating is governed purely and simply by the principle of natural selection. A man picks out a woman, or *vice versa*, according to fancy, and results cannot be governed. But with plants and animals it is different; they are under control, and their propagation can be regulated. Thus, at

the Carnegie Station an outdoor department is devoted to snails, which are distributed over a broad lawn is glass-covered pens for breeding purposes. Even these humble molluses, it would appear, may afford lessons in the working out of the problems of heredity.

This, however, is only one little branch of the Carnegie establishment, which, being zoological in character, embraces quarters for the housing of a multitude of animals of various kinds. There is, for example, a poultry house (the like of which nobody ever saw before), circular in shape and divided into pens by partitions arranged as the spokes of a wheel. Here is a whole problem in evolution by itself, each triangular pen containing fowls of a particular breed, while the entire chicken plant is devised to facilitate the study of those "variations" which modify the development of species.

There are sheep and goats also; but the bulk of the live stock of all sorts is housed in the main building, the interior of which is divided up into a series of zoological laboratories. To the rare and privileged visitor who is admitted to its precincts this wonder-shop—for such it may fairly be called—presents an astonishing spectacle. For the various rooms are nothing more nor less, practically, than so many great cages, in which animals of different kinds are kept under daily and continual observation.

TRUE OF RABBIT, TRUE OF MAN.

One room, for example, is entirely given up to canaries. There are hundreds of the birds—most of them hopping and flying about in a wire enclosure, while others are confined in small cages by twos and threes. If a stranger asks what is being done with them, the director of the establishment—Dr. C. B. Davenport, a scientist of world-wide reputation—will make a non-committal reply. For as yet the work is merely in its infancy; no results are ready to be announced, and those in charge, far from seeking publicity at this early stage of their proceedings, are rather anxious to avoid it.

The whole affair, however, is a breeding experiment, conducted systematically and on a great scale—the first of its kind ever attempted. Another room, somewhat less in size than the one just described, is devoted to rabbits and guinea-pigs, which are confined in boxes arranged tier on tier. Rabbits, as everybody knows, are among the most prolific of mammals, and on this account afford most excellent "material" for the study of heredity. To guinea-pigs the same remark applies, a female becoming, in the ordinary course of events, a great-great-grandmother inside of a few months, so that in a comparatively brief time many successive generations may be passed in review.

50,000 FISH EGGS.

With certain limitations, one may say that in such affairs what is true of a guinea-pig or a rabbit is true of a man. But, for the matter of that, the laws of heredity embrace all animals, from lowest to highest. For which reason, it is not so very surprising to find that another room in the building described is occupied exclusively by insects. There are ever so many species of them—big bugs and little bugs, bugs innocuous and bugs noxious (in an economic sense); but each family is in a glass-covered box by itself, living and propagating its kind in freedom from all unnecessary molestation.

There is another room devoted to the rearing of crabs, shrimps, and lobsters; and yet another, given up to the artificial breeding of fishes, inasmuch as eighty thousand fish-eggs may be hatched inside of a week in a jar holding a gallon of water (with a suitable syphon for carrying a current through the receptacle). It is obvious that the finny tribe, thus handled, offers exceptional opportunities for observation in respect to all sorts of matters relating to the inheritance of physiological traits. Furthermore, the fishes can actually be kept under watch and examined microscopically before they are born, inasmuch as the spherical capsules containing the "fry" are transparent.

Every bit of it is tremendously interesting. For example, one thing which the experimenters at Long Island are trying to find out is whether there is truth in the so-called "law" of the scientist Galton, who expounded his famous theory

many years ago, and, if so, how much. Galton's idea was that one-half of the sum of all your inheritance (physical, mental, and moral) is derived from your two parents. An additional one-fourth comes from your four grandparents. An eighth is contributed by your eight great-grandparents, and the balance of your make-up may be referred to the rest of your ancestors more or less remote.

This, however, is only a sort of working hypothesis, highly generalised. It could not be considered as applying literally and exactly to any individual human being. Of "dominant traits" and "prepotencies" it makes no account whatever. A prepotency, it might be explained, is an ability shown by a parent to transmit his or her own characteristics to the offspring in such full measure as to make them predominate. Thus certain stallions are exceptionally good sires, because they perpetuate their qualities in the foals which they beget.

Wilhelm Turk.

I beg to acknowledge receipt of your very handsome medal, the sight of which no doubt will encourage many to act up to the motto.—J. Cassidy (Kelvinbridge).

Many thanks for the most beautiful little medal which has arrived quite safe. It has already given quite an impetus to Physical Culture amongst my friends, whose voices are loud in praise of Eugen Sandow and his system.—W. Jenner (Sheffield).

Free Meals in Paris Schools.

Figures have been published showing the extent to which the school children of Paris have taken advantage of the free meals system. The growth of the system is represented by a curve. Beginning with the year 1886, when the proportion was 36.6, the curve reaches 65.3 per cent. in 1905—an increase of nearly 30 per cent. in 20 years. The rise is almost persistent, but not quite. It is continuous from 1886 to 1898, when it reached 63.93 per cent., but it drops down until the year 1902, after which it ascends again. It would seem that the working classes of Paris benefited from the great exhibition of 1900, which employed a vast amount of labour and stimulated numbers of industries, and that the effect was seen in the percentage of children applying for free meals. Other facts are that the progress from 1886 to 1892 was most considerable, representing the difference between 36.6 and 56.11; there is a gradual rise to 63.93, reached in 1898; after that, as before said, there is a decline until 60 is reached; then the curve goes upward to 64.7, the figure for 1904, and to 65.3, recorded for last year.

Animals that never Drink.

There are some animals that never drink; for instance, the llamas of Patagonia and certain gazelles of the Far East. A number of snakes, lizards, and other reptiles live in places devoid of water. A bat of Western America inhabits waterless plains. In parts of Lozere, France, there are herds of cows and goats which hardly ever drink, and yet produce the milk for Roquefort cheese.

Effect of Good Living.

Measurements made in London schools show that the children's stature, as well as their weight, increases regularly in passing from the poor to the well-fed and well-clothed.

PHYSICAL VALUE OF MILITARY TRAINING.

The Model Republic—Switzerland.

"IT was on the correlative of universal military training that his interest mainly centred—the physical improvement which universal military drill, voluntarily undertaken, would undoubtedly effect in the young men of town and country all over the Kingdom."

So said the Bishop of Exeter at the annual meeting of the Devon and Exeter branch of the National Service League.

"On military matters," he continued, "he was in no sense a judge. In common with all good citizens he felt, in the present state of the world, it was quite necessary that we should be able to repel invasion if any other Power was so unfriendly as to declare unprovoked war against us. The work of the League linked itself with a great many wider questions which affected not only the external defence but the internal well being of our country—questions in which he could not but take the very liveliest and keenest interest, and which, if promoted successfully by this League, would entitle those who were at its head to great credit for their service for the good of their country. The League was one which aimed at making military training universal. The country, which was, he believed, more than any other, before the eyes of the promoters of this League, as their model, was the independent Republic of Switzerland, where every full-grown citizen was trained and was liable, at certain times, of his life, to be called out for military service. It was on the correlative of universal military training that his interest mainly centred — the physical improvement which universal military drill, voluntarily undertaken, would undoubtedly effect in the young men of town and country all over the kingdom. He believed it would do much to set back the current that existed to some extent among them at least of physical deterioration. In addition to that, there was the moral improvement which he was quite certain would, no less than the physical, follow in the train of the adoption of such a system as theirs. It was a most invaluable lesson for every human being to learn that there was something which he had to do, not because he wanted to do it, not because he had argued himself into believing it would be to his interest to do it, but because he was told to do it, and because he must do it. That was the spirit which of necessity animated an army, and which was inculcated by military drill. He did not want to see England militarised, but he was quite certain that, in addition to the physical benefits of which he had spoken, there was really great, substantial, and lasting moral gain to be achieved by the universal adoption of the military or naval training which that society had before it."

Dr. Herringham, of St. Bartholomew's Hospital, advocated the adoption of universal compulsory military training from the point of view of physical culture.

Mr. E. J. Domville said the problem which would face them in the next century was the difficulty of getting people to realise that there was as good a life to be lived in the country as in the town, and that life had other aims and suggestions that were likely to be useful and beneficial to them than merely sharing in the feverish activities of a city. If they could only induce people to accept that fact they would do something to improve the national life, but short of that the modicum of country life which could be secured by an adhesion to the principles of the National Service League in itself made it likely to be useful as an element for improving the public health and securing public safety. It was no spirit of militarism that suggested they should be strongly provided against anything like an invasion from outside. He who wished for peace must prepare for war. Every man in the country should be capable of carrying and using a rifle, capable of working together in unison with his fellows in obeying orders of command.

RESULT OF MARCH GOLD MEDAL COMPETITION.

Names and Addresses of Winners.

The following are the winners of the Monthly Gold Medal Competition for March:—

1. H. Baulf (Winner over 18), Bradford.
2. Stephen Smith (Winner under 18), Dundee (two views).
3. Sirdar Gurkirpal Singh Mann.
4. W. Fall, Leytonstone.
5. W. E. King, Lincoln.
6. G. Weyhall, Birmingham.

HOW WATER HELPS DIGESTION.

It Constitutes 95 per cent. of the Gastric Juice.

HOW much water should we drink, and when should we drink it, are questions so simple that, at first sight, their discussion seems superfluous. One would naturally answer, "Drink all the water you wish when you are thirsty." But "authorities" say, "Drink more than you wish when you are not thirsty;" for they recommend that a gallon or so be drunk between meals—which is more water than we need, and the very time the system least demands it. Usually we experience thirst during, or directly after, eating.

Inasmuch as 87 per cent. of the whole body is water, which is, of course, being used up every moment, there is no question that we should drink of this element copiously. But it is a serious question whether we should refrain from water at meals—the time we particularly desire it.

There is a class of persons, ever growing more numerous, that believes that whatever is is wrong. For the natural and simple they would substitute the artificial and complicated. To drink water while, or directly after, eating, is a natural instinct. Give a dog his dinner, putting a bowl of water near it, and observe that he will first eat all he can, and then immediately drink. Wild animals look for a stream after feeding. Cage birds will stop pecking at seed to sip water. Children have a perpetual thirst; and I have seen babies that, unlike young Oliver, have refused to eat more when denied water after every few mouthfuls.

It is especially important that babies be given what water they wish, and at the time they wish it, which is usually at table.

The thinner food, the more easily and thoroughly is it digested; in fact, it cannot be digested until it has been made liquid by the gastric and intestinal juices. Indigestion is caused often by food that has not been sufficiently moistened by the digestive secretions.

There are sound physiological reasons for our craving water with meals. Water is the solvent that constitutes 95 per cent. of the gastric juice. Now, when one eats a hearty meal and does not drink, the amount of water in the stomach is not sufficient thoroughly to moisten the great quantity of food; and this makes digestion difficult. On the other hand, when enough water is ingested with the food, the latter is well moistened and broken up, the digestible particles being then readily acted on by the gastric juice and afterward absorbed. Again, when the partially digested food (chyme) passes into the intestines it is most important that it be very moist, particularly as water is constantly absorbed from the chyle in the large intestine. Bad cases of constipation are caused by dry chyle remaining in the intestines, where it sets up an inflammation that sometimes proves fatal—dry fæces, of course, resisting peristaltic action. The excrement of persons suffering from constipation is always dry and hard, and is a potent cause of appendicitis.

The idea that water-drinking at meals unduly dilutes the gastric juice is nonsensical; water being not so palatable that one is apt to drink more than his digestive functions require. As a matter of fact, water greatly facilitates the digestion of albuminous substances. In this connection Dr. A. Jacobi, in his work on *Infant Diet*, page 67, says: "In experiments upon digestion of albumen with gastric juice obtained from the stomach of animals, it was noticed that after a certain time the process began to slacken, but was renewed merely by the addition of water. The gastric juice became saturated with the substance it had dissolved and ceased to act upon what

remained until it had been diluted. In the living stomach this dilution is of even greater importance, for it permits of the immediate absorption of the substances soluble in water, and which do not require the specific action of the gastric juice." Neither the gastric juice nor pepsin has any true digestive action unless they be largely diluted with water.

It goes without saying that it is not the food that is ingested, but that which is digested, that does good; and this principal holds good with water, which is practically a food. Now, when one resists the perfectly natural desire to drink while eating, he may not be thirsty several hours afterward, but he is advised, nevertheless, to force himself to drink at that time. But if he drinks then, the water, having no food to mix with it, will go through him, as it were; that is, will do no good.

The importance of water to the human economy may be inferred from the various purposes it subserves. First, it softens and dissolves solid foods, thus facilitating their mastication and digestion; second, it maintains a due bulk of blood and the structures of the body; third, it keeps substances in solution or suspension while moving in the body; fourth, it supplies elements in the body's chemical changes; fifth, it makes easy the elimination of waste material; sixth, it discharges superfluous heat by transpiration through the skin and by emission through other outlets, and, seventh, it supplies in a convenient form heat to, or abstracts heat from, the body. Some of these functions are performed by water in its liquid state, and others in a state of vapour.

OUR VOLUNTEERS.
Private Orkard shows some extraordinary feats of horsemanship in the camp "kitchen."

In summer much water should be drunk at and after meals, and before retiring at night. Thus the blood will be cooled and danger from sunstroke averted.

A fact that thin persons who wish to become fat should bear in mind is that much more food may be eaten, and it will be more thoroughly digested, if one drinks, than if one does not drink, while eating. No doubt many have noticed the relief experienced when, replete with food, they have sipped water. Frequently I have seen children writhing with the pain of colic instantly relieved by a few swallows of water. Dr. Jacobi has said that the colic of infants is due to a too concentrated milk or other food, and that the free drinking of water will often cure it.

Have you indigestion? Try water instead of drugs with your food.

Don't Cross Your Knees.

A medical authority has recently uttered a warning against the habit of sitting with one knee crossed over the other—a pose which is nowadays almost as common among women as among men. This apparently harmless habit, it seems, is likely to cause sciatica, lameness, chronic numbness, ascending paralysis, cramps, varicose veins, and other evils. The reason is simple: The back of the knee, it is explained, as well as the front of the elbow and wrist, the groin and the armpit, contains nerves and blood-vessels which are less inadequately protected than in other parts of the body. The space behind the knee contains two large nerves, a large artery, and numerous veins and lymphatic glands. It is the pressure on these nerves and vessels which is apt to give rise to the various troubles against which we are warned.

NOTES FROM NEW ZEALAND.

[I have to thank an unknown correspondent for the following items of interest, culled from New Zealand papers.—THE EDITOR.]

The Evils of Cramming.

INTERVIEWED by a *Star* (Dunedin, N.Z.) representative with respect to Dr. Truby King's indictment concerning over-study in our schools, Mr. P. Goyen (Chief Inspector of Schools) says :—"The cases cited by Dr. King in support of his condemnation of our education system, are, unfortunately, too true, but to my thinking, they do not establish his thesis. They certainly show that of many hundred scholarship winners two are now inmates of an asylum, but they do not, I think, prove a casual connection between our education system and the unfortunate condition of the inmates. The cases in question are, I think, well known to me, and, from what I know of the temperaments and circumstances of the patients, I may, I think, hazard the suggestion that the effective causes of their lunacy are discoverable outside our education system. Failure of the brain may be due to causes that are so deep-seated in inheritance as to elude our ken, and that are made openly operative only by circumstances or abuse of circumstances in which the brain has to work.

"In a highly-organised system of education one must discriminate between cause and occasion. Anyhow, an adequate diagnosis of all such cases seems to me to require that we should take into account many things besides our system of education, as, for example, home and social environment, and heredity with all its powers and tendencies. The words of Dr. King ought, however, to be a warning to parents of highly-strung, eager-minded, ambitious children whose physique is not strong enough to bear the strain of competitive examination. In most, if not in all, cases of breakdown, the responsibility lies, I believe, much more with parents than with the schools and the system of education. In the case of the average child there need be no alarm, for he will do just what he must and no more that will pass muster in his class. He needs the spur, not the curb. As I read Dr. King's address, the education given in our schools is one of unmitigated cram. I do not agree, nor do my colleagues. We do not so characterise the work done even in the worst of them."

Dr. Ogston, District Health Officer, and formerly on the professional staff at the Otago University, on the other hand, endorses what the Superintendent at Seacliff Asylum has stated. He says the whole system is cramming to pass examinations, and not assimilating knowledge to be used in after life, therefore, the system leads to waste of energy and no good result. "I speak of what I know," said Dr. Ogston. "Many young students have come to me in their University course, and I have seen the evil effects of cramming. I take our system to be cramming without education. In England they are abolishing the pass system, because they found it useless. As regards our primary schools, I have had to advise parents to take their children from school, because they were being over-stimulated by examinations. The work of our primary and secondary schools is unscientific and burdensome. It is nonsense to give scholarships to pupils who gain only 50 per cent. of the attainable marks. It is also waste of time to push on such pupils.

"Nature has not meant such children to cram. I am aware that schoolmasters think on the subject as we doctors do, that it would be far wiser to train pupils just to the extent of their capacity and let dull ones stop when they have absorbed as much learning as they can. Treated in that way, the boys who are not smart at examination work would often shine at

something else. If not pressed on to a breakdown, they would get a fair chance. Some of them would make good business men if set that way, instead of being forced into the wrong groove. I have in my mind a colleague of my own who had to confess to being a failure at class work. He went up for examination at the same time as myself, and had to rely on 'cribbing' to scrape through. His people had to the teaching line, he proved no good, and shaped so badly that his pupils derided him and pelted him with snowballs. He left the teaching, and became one of the smartest literary men in London. Luckily, he found out in time his true vocation. Think, too, of the pitiable case of William Smith. He and I were at College together. He was the most brilliant student of his year. He

HOW THE BLIND ENJOY HEALTHY PLAY.

Dancing is largely enjoyed by the blind scholars in the Royal Normal College for the Blind, near Sydenham

the good sense to see his deficiency, and they put him into a commercial house, and as a young man he was able to return from Ceylon with a fortune. That man, if compelled to go through with his University studies, would probably have lost heart and become a failure.

"Another case comes to my memory of a man who could pass examinations without any trouble at all, but when he went to apply his knowledge by taking won a lot of scholarships, went in for the Church, became a professor at Aberdeen, and published in the *Encyclopædia Britannica* an article that was regarded as heretical. After that he went to Cambridge as a lecturer. He was the most brilliant Oriental scholar of his day. You have heard of his sad end. He died, worn out, at middle age. His brother, another clever man, died from the same cause before he got his degree."

New Zealand is certainly paying much importance to the physical education of school children. A deputation, says the *Lyttelton Times*, was recently appointed by the Physical Culture Society to inquire into the methods of physical training as given in the public schools, with a view of ascertaining if the present methods were effective, and, if not, to suggest improvements. The observations of the deputation are embodied in the following report:—

In working to produce a physical effect there should be three distinct aims in view: (1) To raise the standard of health, and hence increase the power of resistance to disease; (2) to assist in the treatment of distinctly pathological conditions; (3) to aid the development of the children in structure and function. The hope for an improvement in the physical well-being of the nation lies much less in elaborate schemes and eloquent speeches than in the prosecution of sound methods in the schoolroom and the playground.

BREATHING EXERCISES.

The groundwork and basis of physical training should be the development of the lungs. In that respect, therefore, the value of breathing exercises cannot be over estimated. We regret to say that, with the exception of one or two schools, this important branch, if not omitted altogether, is not by any means receiving that consideration which it deserves. In some schools, where the headmaster has realised the value of physical training, the children got a five-minutes' course of breathing exercises daily, but the value of this depends altogether on the knowledge and enthusiasm of the headmaster, and in many cases, although the intention of some of these gentlemen is good, yet the physiological value of the exercises is practically *nil* on account of wrong methods of instruction and defective technique.

We found that, in the breathing exercises done by many of the schools, the breath was held too long—sometimes until the children were absolutely purple in the face, and the veins of the neck and temple had swelled considerably. Many of the movements were too jerky, many exercises were too sustained; there was absolutely no attempt to differentiate between children of different degrees of strength and physical fitness; and the physiological effects of the exercises were nullified by the incorrect attitudes taken by the children. Neither masters nor children seemed to understand that to breathe properly it was necessary to stand properly.

In every school we were struck by the fact that there was a certain percentage of children who were obviously unable to take proper part in the physical exercises and games suitable for the majority of their fellow-scholars. It is necessary that a form of remedial physical training should be adopted for this class of scholar. Periodical medical examination of the scholars would bring to light many of these pathological conditions.

MUSCULAR EXERCISES.

In the muscular exercises, the value of the movement was minimised by the following defects: (1) By the children keeping their mouths open or holding their breath; (2) by the undue weight given to spectacular effect; (3) by the fact that some of the exercises were more suited to adults than to children; (4) by the fact that the duration of many of the squad exercises was too long, and they were too tiring for delicate children; (5) from a physiological point of view, the club and wand exercises are usually valueless, and sometimes harmful.

The ideal of physical training in the schools is the military ideal. We are entirely against the drill-sergeant, whose exercises are primarily intended for grown-up men, and not for boys and girls of tender years. We do not wish to suggest that the Education Department is blind, but we urge upon it the necessity of obtaining assistance from the medical faculty and physical culture experts in the selection of exercises. We are obliged to characterise the physical education, as carried on in nearly all the schools we have visited, as a farce. We also deprecate the idea of teachers attempting to instil knowledge of physical training into their pupils before they have themselves been properly taught as unfair

to both teachers and pupils; and we wish to point out emphatically that proper physical exercise for children is as different from the work of the drill-sergeant as could well be imagined.

In the schools we have examined, in most cases neither teachers nor children have the faintest idea why they do certain movements, many of which are perfectly wrong. This is doubtless due to the absence of a properly qualified scientific inspector of physical training.

DAILY EXERCISE.

One of the worst features of the physical instruction given throughout the schools is this: that only one hour per week is allotted by the syllabus to the subject. The result is that too much work is given on this one day in the week, and not enough — usually not any is given on the other days of the week. Ten minutes' physical exercise, five times a week, will produce infinitely better results than a two-hour lesson once a week. We also disapprove of the exercises being done to music. No doubt this minimises the fatigue (there would be no fatigue if the exercises only lasted for ten minutes), but it detracts from the will-training, and diminishes very considerably the educational value of such movements.

LOUIS CYR, OF CANADA.

THE NORMAL SCHOOL.

So far as regard being paid to spectacular effect rather than physiological value, the Normal School, Christchurch, is not very much ahead of the other schools in the girls' department; but it is distinctly in advance of the other schools in the boys' department; and in the infants' department, under Miss Starkiss, the work done was excellent. In this school we found that great stress is laid upon breathing exercises, which are performed correctly and intelligently. This was the only school we inspected in which an attempt was made to introduce abdominal breathing. The muscular movements of the boys were done much more cleanly and neatly than in any other school we have inspected; the general standing and set-up of the boys themselves were markedly better, and the spirit in which they did their exercises was very commendable.

The contention which we heard from so many of the masters that "physical training wastes such a lot of time" in the matter of "falling-in" etc., is attributable, in our opinion, to the lack of proper discipline and organisation. In the Normal School every boy was in his place thirty seconds after the whistle was blown.

THE ST. ALBANS SCHOOL.

Like the Normal School, the St. Albans

School was also in advance of the general average in regard to one of the squads of boys. In the case of both schools this advance was due to the individuality of the particular masters in charge of these sections, viz., Messrs. C. T. Aschman and C. Hall.

SUGGESTIONS.

In conclusion, we have to make the following suggestions :—

(1) That a competent expert of physical training should be appointed as an Inspector of Physical Training of State School Children in New Zealand.

(2) That all school teachers should receive definite and regular instruction in physical training, because no one can teach what he does not himself know.

(3) That, wherever possible, a system of taking physical measurements and weights of the children at regular intervals should be instituted; and the teachers should be instructed in regard to the correct increase of weight, stature, lung capacity, etc., of children at different ages.

(4) That periodical medical examination of the scholars should be arranged, in order to enable children suffering from slight physical defects to receive adequate corrective training, and that the co-operation of medical men be invited.

(5) That proper seating accommodation should be provided for the children, viz., adjustable dual desks, in order to minimise the risk of spinal trouble in later life. In many cases the good effect of physical training would be quite counteracted by the unhealthy attitudes assumed by the children during school hours.

(6) That ten minutes' breathing exercises should be given daily in every school to all the scholars. This, combined with proper ventilation, would do more to stamp out consumption in the colony than any other preventive measures that could possibly be adopted.

(7) That all school rooms should be ventilated in such a manner as to allow at least 3,000 cubic feet of fresh air to enter the room per hour per child.

(8) That teachers should receive instruction in the matter of hygienic dress, and that they should be enjoined to direct the attention of the girls particularly to the injurious effects of tight underclothing; and that the boys, wherever possible, should be allowed to exercise without coats and collars.

(9) That, weather permitting, all exercises should be performed in the open-air.

(10) That swimming should be made compulsory in all schools.

(11) That periodical examination of the children's teeth should be made by properly qualified dentists.

(12) That the school rooms should be lighted in such a way that the children's eyesight is not deleteriously affected by their continually working in their own light. The Clyde Quay School, Wellington, was the only school we visited where due consideration was paid to this important matter.

Still They Come.

New diseases spring up on every hand. "Summer throat" is the latest. It consists of a slight soreness and dryness, with a desire to cough.

"Summer sore throat," said a Harley-street consultant recently, "is the natural corollary to warm weather. People sit in draughts, stay out in the night air, lie on the grass, wear their lightest garments, and leave off as much of their clothing as possible. Summer sore throat, which has something of the rheumatic type about it, is the natural result. Women, with their thin dress fabrics and 'pneumonia blouses,' are more frequently sufferers than men.

"The best remedy is a cup of hot tea first thing in the morning; the hotter the tea, the more rapidly the trouble disappears. Bicarbonate of soda is also an excellent remedy.

"Summer sore throat is purely a morning ailment, the penalty paid by the patient for imprudences of exposure overnight and during the preceding day."

Shun the "Blues."

"Blues" are unnecessary. They mean one of two things—an unhealthy body or a diseased mind. In either case distraction is the best remedy. One must strive to forget self in work, in reading, or in pleasure. A busy life, judiciously arranged, will crowd vapours to the wall. There are women who never seem to have any resources. Let them cultivate a good-sized feminine acquaintance, with varied types to suit one's moods, to sew with this one, shop with that one, entertain and be entertained. There is always charity work to fill up one's time, even when the social amenities are not pleasing. The best cure for loneliness is a brisk walk through the clear sunshine and pure air. It generally puts a person into a reasonable frame of mind, but is often avoided by sick-minded people.

IN THE ARENA OF SPORT.

AN AMERICAN SPRINTER.

Sports Diary.

The following is a list of the principal athletic and cycling fixtures during the present month :—

19.—Belgrave H. 880 yards (open).—B. C. Donlevy, 14, Commercial Road, Pimlico, S.W.

19.—Finchley H. (members). Whetstone.

19.—Aylesbury (Bucks Constabulary). 440 yards, one mile.

21.—Essex County A.A. 100 yards, one mile, 300 yards hurdle, 100 yards, 440 yards, one mile, and two miles walking, Essex championships; also 880 yards invitation.—R. Cook, White House, Chelmsford.

21.—Salford H. 120 yards, 440 yards, 880 yards, one mile, two miles walk, 300 yards hurdle, 100 yards scratch, mile relay (220, 220, 440, 880 yards), 500 yards obstacle.—J. H. Hardwick, White's Chambers, Blue Boar Court, Manchester.

21.—Harrow A.C.

21.—Dursley.—120 yards, 440 yards, one mile, and one mile walk.—Hon. Sec., *Gazette* Office, Dursley.

25.—Suffolk Police.

25.—Hampton. 100 yards, 440 yards, one mile.—C. J. Smith, Oakleigh, Acacia Road, Hampton.

25.—Tyntsfield (Somerset). 100 yards, 440 yards, 880 yards, one mile.—A. Winfield, Backwell School, West Town, Somerset.

26.—Sunbury. One mile.—A. Parratt, Park Road, Sunbury.

26.—Billericay.

26.—A.S.R.S. Railway Sports, Crystal Palace. 100 yards, 300 yards, one mile, two miles walking, tug-of-war; also 100 yards, 300 yards, etc., for railway servants only.—J. R. Leonard, 12, Amersham Grove, New Cross.

26.—Oxford City Police.

26.—Finchley H. (members).

28.—Southend H.

28.—Reading A.C.

Bowls for the Fair Sex.

Bowlers have been agitated lately as to the merits of the English and Caledonian methods of playing. As a result, Mr. Angus McKie, captain of the Crown B.C., Streatham, who is unmistakably of the Caledonian cult, met, in single-handed competition, an English lady, Mrs. Cox, who has won quite a number of games on the Redhill Green, upon which the game under notice took place. McKie gave neither points nor chances away, nor did Mrs. Cox need them. The game was keen and exciting throughout. The Scot displayed the pertinacity of his race, but found defeat by two points—7 to 5.

This smart little victory, says the *Sportsman*, by Mrs. Cox follows almost immediately upon the bright little speech by Lady Cranston, wife of the Lord Provost of Edinburgh, who, in opening the Dean Club's Fancy Fair, declared that bowls might well become popular as a pastime for ladies. Then, singular to relate, two evenings before Mr. McKie found his Waterloo at Redhill, Mr. W. C. Upton, the leading Inter-State Australian bowler, now in London, was at the Crown green, where he met Mr. McKie, and commented on the hard battle which he (Mr. Upton), as a member of three rinks of Sydney bowlers, experienced against a similar number of Victorian ladies who were visiting the New South Wales capital on the occasion of the Inter-State Tournament. Mr. John Young, the father of the pastime, was one of the stalwarts who resisted the skilful play of the Melbourne sportswomen. The ladies, though playing on a strange green, only narrowly missed a victory, whilst a day or two before they, to use an Americanism, "whipped" a team of bowling men on one of the Sydney grounds. The fact does not appear to be known generally that a rink on each of the London public park greens is reserved for women, provided due application is made.

Braid and Harry Vardon to Tour Scotland.

James Braid, the present open champion, and Harry Vardon, the champion of 1896, 1899, and 1903, will take part in some interesting matches in Scotland next August. On the 14th of that

month they will pay their first visit to the Royal Dornoch Club, and two days later the famous professionals will play at Ballater (Aberdeenshire), on the occasion of the opening of the extended course. On August 18th, Braid plays Archie Simpson (Aberdeen) at Stonehaven, and on the same day Vardon and Herd play at Inverleithen (Peebleshire). Other fixtures will probably be arranged.

Sutton's New Pavilion.

Thanks to the generosity of Mr. Ralph C. Forster, High Sheriff of Surrey, the Sutton C.C. is now able to boast a handsome pavilion instead of what was, half a century ago, the waiting-room at Sutton Railway Station. Its cost is about £650, whilst Mrs. Forster has kindly provided the furniture. Mr. J. S. Brocklesby was the architect of the building, which is of old English barn style, 50 ft. by 32 ft., with thatched roof, and a verandah along the front and sides.

Australian Cricket: Colonial Deadlock at an End.

The cables to hand from the Antipodes during the last few days have considerably improved the prospects of a visit from England during the Australian season of 1906-7, by the removal of most of the difficulties caused by the dispute between the various Colonial bodies. Firstly, the conference between the Victorian Cricket Association and the clubs which had seceded and formed the newly-established Victorian League resulted in an understanding that will doubtless be ratified by the two bodies, and the Melbourne C.C. will, therefore, signify their cordial support of the invitation to be re-issued by the Australian Board of Control, asking the Marylebone Club to despatch a representative English side next October.

Mr. Frank Iredale, cabling to the *Daily Mail*, states, on the authority of the secretary of the Australian Board of Control, that the renewal of that body's invitation to our M.C.C. will be made contingent on the removal by the New South Wales Association of the suspensions recently passed on the leading players of that State, including Messrs. M. A. Noble, V. T. Trumper, A. J. Hopkins, R. A. Duff, J. R. M. Mackay, A. Cotter, etc., for without the assistance of those players it is recognised that Australia could not place a representative side in the field for the series of Test games. Iredale, however, points out that application would have to be made to the N.S.W. Association by each player personally, a fact that may prove rather a stumbling block, as being somewhat of the nature of a humiliating step, although the letter of Noble, dated May 21st, and laid before the body in question the same day, when the Committee's recommendation of suspension was adopted, was couched in reasonable language, and with a laudable freedom from defiance in its tone. With the aid of a little forbearance and conciliation this obstacle should, we think, be surmounted, and perhaps the greatest difficulty will arise, as "Wanderer" points out elsewhere, when the invitation has come to hand, and the Marylebone Club, if still favourably disposed towards the project, sets to work to get together a team that can be regarded as really representative of the Mother Country.

His Hundredth Wicket.

In bowling Fane at Leyton, Hirst secured his hundredth wicket this season. He had previously completed his thousand runs at Sheffield. He has now accomplished the feat of taking a hundred wickets and scoring a thousand runs seven times in the course of his career, and, in so doing, equals the record of W. G. Grace, who achieved the dual performance seven times between 1874 and 1880. The present season is the fourth in succession that Hirst has enjoyed this distinction.

Wrestling Tournament.

On Monday evening, July 9th, the London Amateur Wrestling Society held a Cumberland and Westmoreland Tournament at their Club-room, St. Bride School, Ludgate Circus, London, E.C., for the Challenge Cup presented by W. Laurence Smith, Esq., this trophy, on being won three times (not necessarily in succession), to become the absolute property of the winner. To ensure that every member shall have a fair chance, it is wrestled for on the American tournament system under a sealed handicap (that is to say, each competitor wrestles every other competitor in the tournament).

We do not know who arranged the handicap, presumably the committee, but from the manner in which the work was carried out we should think the hon. secretary (Mr. G. H. Wheeldon) had a great deal to do with it, for a closer contest could not be wished for.

There were 16 entrants, 13 of whom competed. Messrs. A. Banbrook, G. P. Ellam, and S. V. Bacon tied for the first prize. On wrestling off, results were as follows.—S. V. Bacon defeated A. Banbrook two falls in succession, G. P. Ellman a bye. The final resulted in first fall to Bacon, second to Ellman, final fall to S. V. Bacon, who becomes the first holder of the cup, together with gold medal. G. P. Ellman took second prize, a gold centre medal.

From first to last the match was splendidly managed, the proceedings going on without a wait for a couple of hours.

The officials included the donor as referee, and it did not surprise our representative in the least to see Mr. Laurence Smith give a few hints to some of the competitors after the bouts were over, and he would not have been surprised either had the judges held a little tournament of their own, as they were as keen as many of them were thirty years ago.

In conclusion, we may say that we consider this wrestling society is doing a splendid work in London, and we hope to see many more as interesting evening's sports at their headquarters.

In an early issue we shall try to reproduce photos. of the winner and semi-finalists in the above competition.

READERS' CLUB.

President - - EUGEN SANDOW.

Motto:—One may Help Many.

For the exchange of ideas, personal experience and photos for the encouragement of Club Members. Every Reader is a Club Member.

Readers are expected to act up to the Club Motto, and for services rendered the President will award to the sender of every published idea, experience or photo, the Club Fellowship Medal as a token that the rightful owner has earned the Fellowship of the Club.

[I am sure that nearly everyone of my readers will read with interest the following two letters which I have received from a Fellowship Medallist who recently left this country to take up farming work in Canada. Almost everybody one meets now is discussing the possibilities of success in Canada, and it will be seen in these letters that Canada is no place at least for the unfit. My correspondent is a sturdily-built, splendidly-built young man, and his letters show that he has also plenty of what the Americans call "sand," and we call "grit." I have no doubts of his ultimate success. Owing to length of the letters, I have to publish them in two instalments.—THE PRESIDENT].

To my Fellow Readers.

Colonist Car,
Ontario.
9/5/06.

DEAR READERS,—As I had promised our President to send particulars of my voyage to Canada, I now do so. We had a fairly good passage, and entered the St. Lawrence on Friday afternoon. I had expected so much in the way of scenery that my first impressions were rather disappointing. The cliffs were high, but, on the whole, not particularly interesting. At night, however, the cliffs were thrown into relief by the moon, and, with the reflection on the water, made an impressive scene, and many passengers stayed on deck far into the night.

Next morning I was on deck early. The scenery had changed from what appeared quite ordinary cliffs to most magnificent hills with numberless houses and hamlets lying in the valleys. Though I had heard men declare to witness this scene was the experience of a lifetime, and I therefore expected much, yet I found the scene far more majestic and magnificent than I had imagined, or could have imagined, even in my wildest flights of fancy. As I looked, I felt it was well worth travelling over 2,000 miles to witness so grand a scene. As the sun set—such a sunset as I have never witnessed in England—the scenery was beyond description; even the most rough and uncultured among the passengers seemed awed by the grandeur of the scene, and few spoke, and then only in subdued tones.

The province of Quebec, viewed from the river, seems far more thickly populated than most of the rural parts of England. Along the banks of the St. Lawrence there is an almost continuous line of houses for hundreds of miles. We reached Quebec on Sunday evening (6th May), but were not allowed to go on shore. Though the town is built on high cliffs, and possesses some fine buildings, such as the Chateau Frontinax and the Citadel (the latter built on a high cliff of solid rock, and looks completely impregnable), yet the architecture of Quebec looked almost trumpery and insignificant after the gigantic and beautiful scenery we already witnessed.

Many of the French at Quebec have an unmistakeable partiality for red paint, red doors, window frames, sheds, etc., being quite a prominent feature of the city when viewed from the river. We arrived in Montreal on Monday evening (7th May). Montreal is a wonderful place; even private houses are built, to a large extent, of solid granite. The large and really fine buildings (there are many of them) are not hemmed in by other buildings, as they generally are in London, but are, for the most part, well in the open, and a good view of them can be obtained. The banks we visited (they are one of the features of the town from the sightseer's point of view) were not built in so many stories, as in England, but were large open halls, similar to the Royal Exchange. The bank of Montreal is like a small edition of St. Paul's, but far more tastefully and beautifully finished. Over the entrance hall there is a fine cupola with three galleries; beyond this hall there is another larger hall, with massive marble pillars supporting the roof; beyond these, there is another still larger hall, at the further side of which are the marble counters and the desks, artistically arranged. The interior of the building is paved, and faced with marble, and the roof is splendidly decorated with gold. The whole design forms as near a perfect bank building as could be desired.

The Church of Notre Dame, viewed from the outside, is not an imposing building, but, on

first entering the church, without exaggerating I can say, that the scene before me literally made me hold my breath. No man could exaggerate the beauty of this church. All that gold, the finest wood carving and painting, the choicest flowers, the most beautifully coloured and artistically arranged statues—in fact, all that the artistic ingenuity of man could devise to beautify this church, has been carried into effect, utterly regardless of trouble or cost. Nothing in the church looks harsh, or, viewed from the entrance, even distinct, the whole appearing rather like a beautiful dream picture than an actual scene. The above is no hysterical exaggeration. No one who has never witnessed this scene can imagine how wonderfully and perfectly beautiful a scene man can design and carry into effect.

One of the most pleasing features of the town is the agreeableness and courtesy of its inhabitants. If you ask a man the way to a place, he will probably walk along with you, chatting pleasantly until he has put you on your road; bye-the-bye, they always speak of east and west instead of right or left. All streets run east and west or north and south. Everyone in Montreal looks agreeable and pleasant. I didn't see any of the disagreeable, discontented type so common in England. All the fellows I met were quite interested in my Fellowship Medal, and asked to feel my muscles. While in Montreal, one of the two friends with whom I came out met a man who knew his grandfather. It appeared he had worked as errand-boy in the same road as my friend's grandfather lived. This man seemed most delighted to meet us, and fairly bubbled over with hospitality. He came out to Montreal five years ago, and is doing fairly well, getting 50 dollars a month, and he hopes to do better shortly.

One of the peculiar features of Montreal (and there were many to me) was the boot-cleaning saloons; the whole trade of these saloons is boot-cleaning. There are many of these, some really well appointed. There is a very good system of trams in Montreal, and practically any street in the town can be reached by car for five cents (2½d.). The drivers in Canadian towns always keep to the right side. Montreal seems to require very few policemen.

In my opinion, the manner in which the shop windows are dressed far surpasses anything of its kind in the Old Country.

There are many interesting customs that I might write about if time permitted. As I write the draft of this letter, I am being rushed through forests and over swamps, through tunnels cut in solid rock and past boulders of granite on every hand. Last night we skirted part of Lake Superior, and I sat up most of the night to view the scene by the light of the moon.

There is a rugged strength and beauty in this land of rock, varied as it is with rivers, lakes, miniature rapids and forests, which combined to make this journey most enjoyable, instead of tedious and monotonous, as I had expected. The engine hauling us weighs 130 tons. Its hooter sounds hoarse and deep, more like the syren of a steamer than the shrill whistle of an English locomotive. The load behind this monster engine (the Chinese might well think them devil possessed, even to my European mind they appear strangely uncanny) is a load weighing over 500 tons; each car is 75 feet long There is a cooking stove in each coach and at the time-tabled stops some of the passengers jump out to gather wood for this fire. At most of the stations a flag is put out if passengers wish to be taken up. The train does not stop at these stations longer than do the trains on the North London Railway. Winnipeg is a curious town; the streets are very pretty, and, for the most part, there is a green on each side of the road, planted with trees. There are some very large buildings; one branch of T. Eton's employs 1,800 operatives. There are four elevators in this building, each able to carry 18 passengers. You can buy almost anything in this store at reasonable prices. The houses, though built for the most part of wood, are very pretty, and there is a general appearance of prosperity all over the town. You do not see the poor half-starved children running about the streets as is so commonly seen in London.

There is much more of interest (at least, I found it interesting) in Winnipeg.

(*To be continued in our next.*)

A Young New Zealand Enthusiast.

Napier, New Zealand.

SIR,—It gives me very much pleasure in writing this letter to you, and no doubt you will be pleased to receive same, as I do not suppose that you receive very many from this little town of Napier. But being a reader of your magazine, and noticing that you have formed a Readers' Club, I would be very pleased if you would put me down on your list as a member. As I stated before, I have been a reader of your magazine for the last nine months, and I think it is a most splendid book.

I have now been training for nine months (being 18 years old), and so, in a few more months, I will have the pleasure of sending you my photo, showing improvement since I first started. My bedroom is one mass of charts and photos., all round the walls, and every night I have some different chaps in, showing them and teaching them how to make themselves strong. But, sir, some of them are what I call lazy, and say, "What a lot of rot!" However, I soon knock that silly idea out of their heads, and give them some facts to prove how I have improved by Sandow's exercises. Years ago I broke my left arm, and when it was put right again it was like a candle. I used to carry buckets of water, do all sorts of things, but I could never get any muscle on it. But since the Grip Dumbbells have been working on it, it has improved something marvellous, and now it is right up to the pitch with my right.

But that is not the only improvement I have gained. I also go in for rowing, running, and cycling, and I reckon if it were not for the Sandow exercises, I would often break down for want of strength and sticking power. My occupation is a clerk in a merchant's office.

HORACE E. BOURGEOIS.

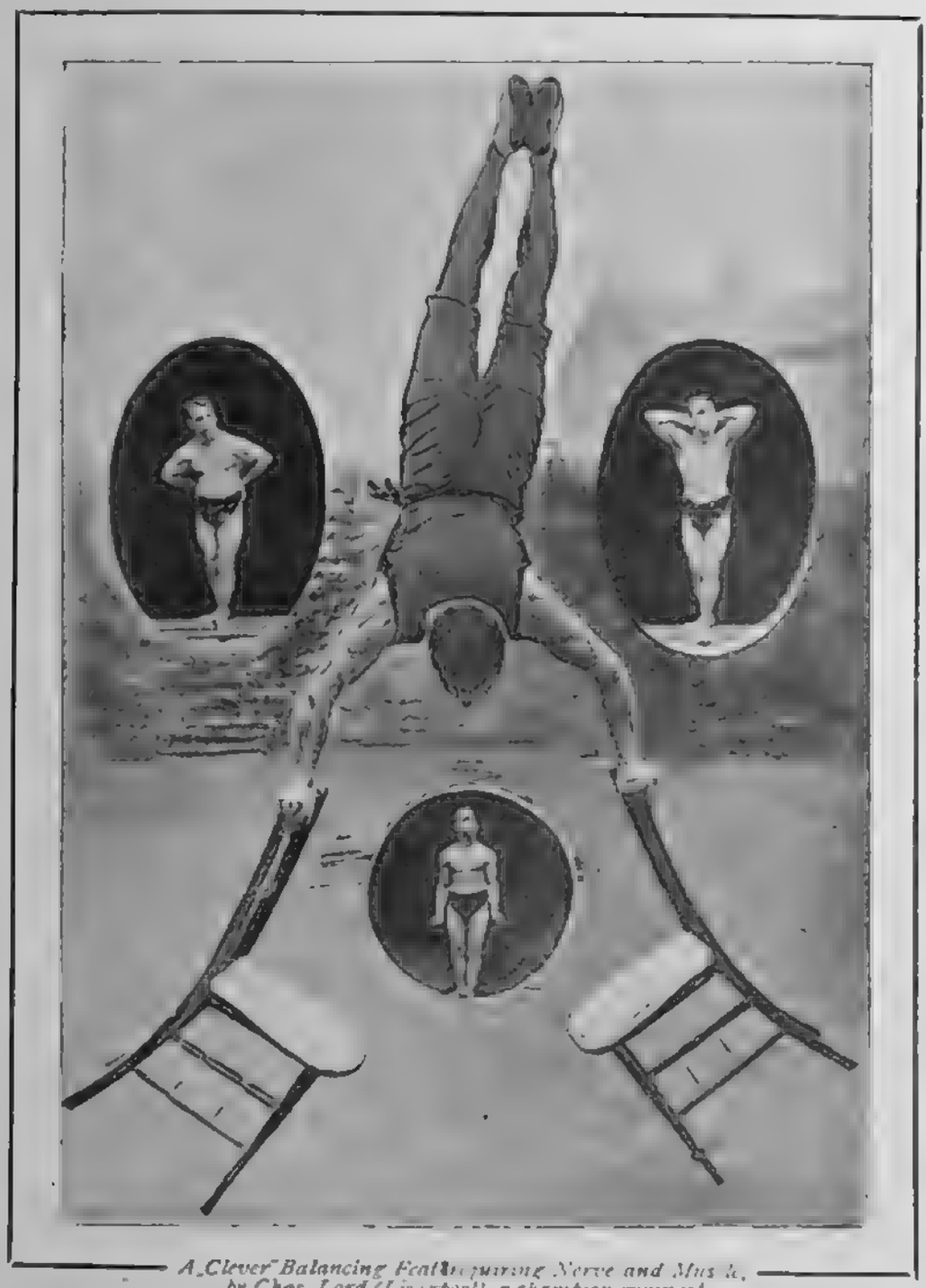
From a Lady Reader.

Criccieth House, London Street,
Newport, Mon.

SIR,—I have no doubt but what this will be considered a rare step for a lady to take, but with my convictions I can hold out no longer. It has taken me some considerable time to gather sufficient courage, but when I think of what your magazine has done for me and is doing week after week, I feel that I could dare anything in the interest of my weak and ailing sex.

It is five months since a gentleman (whose name I saw in your Readers' Club columns in June, now living at Newbridge) called at my home on business, and seeing me looking very pale and ill he handed me one of your magazines, which he was carrying in his pocket, at the same time telling me of what your valuable book had done for him.

I read the first few pages with very little interest, thinking it was not much of a ladies' book, but when I turned to some of your readers' experiences, and learned what your system had done for them, then I thought, "Why should this not do the same for me?" I immediately decided to purchase one of your Ladies' Developers, which I did, and have used it constantly for at least half an hour every day for four months, and now am pleased to say I am feeling perfectly well—*what I could never say before.*



A Clever Balancing Feat requiring Nerve and Muscle, by Chas. Lord (Liverpool), a champion gymnast.

After I finish reading your magazines, I do the same as the afore-mentioned gentleman did in my case, pass them on.

I now think it should be as much a lady's book as a gentleman's, and can promise you if there is anything in my power to encourage lady readers I shall do so.

EDITH CHRISTOPER.

[The above letter ought to convince other ladies who have not yet tried Physical Culture for health, and I am glad to have the opportunity of publishing it. —THE EDITOR.]

Clerk's Advice to Clerks.

Larbert, N.B.

SIR,—I have much pleasure in writing to let you know of the benefit I have derived by taking up your renowned system of Physical Culture. Previous to commencing—about six months ago—I was in very poor health, and subject to attacks of depression, but now, thanks to your excellently compiled set of exercises, I am in the best of health and good spirits.

I am now doing my share for the cause in my own humble way, and inducing my friends to give it a trial.

I am a clerk, and I think it is the duty of *all* who are confined to such employment to take up Physical Culture, and to *stick to it* with a whole heart. Rome wasn't built in a day.

I am the proud possessor of two Developers, one of which I have for lending-out purposes, and the other for home use.

I am going into camp with the Volunteers shortly, and will take my SANDOW'S MAGAZINES for the last six months, with the object of distributing them among the men, which I think isn't a bad idea.

VICTOR YOUNG.

Gymnastic Instructor's Experience.

D.P. Gymnasium Hall,
Hyderabad, India.

SIR,—I hope you will find a little space in your S.M.R.C. "Chat" for a few remarks of mine regarding your system of Physical Culture, and my "personal experiences" may be of some benefit to other readers of your magazine.

Being very fond of Physical Culture from my childhood, I was always practising gymnastic exercises before 1903, knowing nothing about your system. In February, 1903, just after my return from Delhi, where I was with my father, I was seriously attacked by pneumonia. Though I was given up by doctors, yet fortunately, after being ill for a month, I recovered, but in such a weak condition that it was too hard for me to walk without supports. My father and all of my friends thought I should never get as strong as I was, and I being too weak to do any gymnastic exercises, was searching for a substitute.

One day, in a shop, I saw your book, named "Strength, and How to Obtain It." I at once bought it, and returned home with a fresh hope. With the anatomical chart pasted upon the bedroom wall, I commenced the course with a pair of Spring Grip Dumb-bells, while all of my friends were laughing at me. But I never minded them, and followed the instructions given in the chart as regularly as it lay in my power, and got stronger and stronger day by day. I am glad to say that now I am in such a good condition, and have such a good and strong body, that all of those who were laughing at me are now firm believers in your system. Deriving a great benefit from your system, I wished to benefit others by it, and taught your exercises to nearly fifty of my friends.

In 1905, when you were in Bombay, I established a "Sandow System Class" at my own residence.

Some five months ago, two youths, one suffering from indigestion, and the other having liver trouble, came to me to ask if I could do any good for them. I told them to carry out your Grip Dumb-bell exercises in the morning for 20 minutes, with a sponge down afterwards, and to perform the curative exercises given in "Body Building" for indigestion and liver trouble, in the evening. After following my advice for two months, they were quite healthy, and stronger than before, and are now enjoying life, and are very grateful to you and to your system.

I have the pleasure of being a gymnastic instructor in the District Police Gymnasium Hall, and in the Sandow System class.

I am, sir, your most obedient servant,

NOOR SHAH ILHAM.

Can you Beat this?

Gloucester.

SIR,—Perhaps it will interest you to know that the above two strands [referring to an order enclosed for two developer strands.—EDITOR] are for a customer who is now using 20 of your strands at once. We do not know if there are many who can do this with ease, as our customer apparently does, by his ordering two more to fit to his already large number. He is only a young man, and only short in stature. He is a butcher by trade.

C. H. DANCEY.

[I should like to hear if any of my readers can either equal or break this record.—THE PRESIDENT.]

Weak Lungs Cured.

London, N.

SIR,—I must write and thank you for the benefit I, and many others I know, have derived through following your principles.

My work is of a very sedentary nature, and two years ago my lungs were very weak, and I was constantly catching cold and being laid up. In the midst of taking a course of medicine I one day saw your book, "Strength, and How to Obtain It," which I bought, and may say it was the best half-crown's worth I ever obtained. It showed me a way out of my sufferings, and very soon turned me into an enthusiastic disciple of Physical Culture, which I have followed ever since.

Sufficient to say, all traces of my former attacks have vanished, and my lungs and chest

are as sound as possible, while I have also experienced a great physical improvement. I have great cause to thank the day I bought your book, and cannot speak too highly of your system, and may say in conclusion that I have induced many fellows to follow the same through giving them your magazines when finished with.

A. ARSLEY.

His Best Speculation.

Otley.

SIR,—About two and a half years ago a friend showed me your book, "Strength, and How to Obtain It," and I then made as good a speculation as I have ever made. I bought it from him. Shortly afterwards I purchased one of your Developers, and set to work in good earnest with it. After a time I dropped it, and only exercised at long intervals. Now, at this time I was working from 7.0 a.m. to 8.0 or 9.0 p.m., and this soon began to tell on my health. I lost all colour from my face, and became a "pasty-face." About a year ago I commenced performing your exercises with dumb-bells, and my health soon began to improve, and the colour to return to my cheeks. My muscles also began to increase in size. I may say that I was away from home for about nine months, during which time the above change took place. On my return, all my friends and relatives remarked on my improved appearance. I have kept at it ever since, exercising daily, using dumb-bells in the morning and chest-expander in the evening, and am now in splendid health, and feeling as "fit as a fiddle." My friends often laugh at me for my pains, but this only spurs me on to greater efforts.

I have a library of books on Physical Culture, and am always pleased to lend these to my friends. I am a firm believer in the cold bath, and indulge in one every morning. I do not dry myself, but dress as quickly as possible, and as yet have not suffered any harm from so doing. I am pleased to say that I have secured two converts to Physical Culture. One of these—a lady—was suffering from constipation, but on applying remedial exercises she became much better and derived great benefit. The other is my cousin, whom, I see, has been successful in obtaining one of your "Fellowship Medals" (mag. for June 28th).

R. LAWSON.

THREE WELL-DEVELOPED READERS.

Constipation Cured.

Burnley.

SIR,—Just a few lines to thank you for the great improvement in health I have experienced since following your advice.

I was greatly troubled with constipation and catarrh (although I had tried various so-called cures) when a friend of mine lent me one of your magazines. After reading this I took it in weekly, and also invested in one of your Developers; also a pair of your Dumb-bells. After using these and following your advice faithfully, I cured myself completely, and gained 4½ ins. in chest measurement and 9 lbs. in weight in six months.

ROBERT GORMAN.

A Remarkable Cure.

Aberdeen.

SIR,—About two years ago I was laid up with consumption, and the doctor ordered me not to work, and he told my mother that if the month of March didn't finish me the end of the year would.

So one day I saw in your magazine advertised two books, "Strength, and How to Obtain It," and "Body Building," which I sent for and studied. I asked the doctor if I could go in for your system of Physical Culture. He said, "Yes, but be very careful," as I was very weak. Well, I stuck in, and the last time the doctor saw me he said there was nothing wrong with me; I looked all right. Now I am working, and haven't had a day's illness this last sixteen months, thanks to your valuable system.

DUNCAN ANDERSON.

FRAMJI M. MEHTA (Central Provinces, India)—The conditions for the monthly Gold Medal Competition are published in each issue of the magazine.

V. K. MULHAKRISTNAN (Madras). — Medal has been despatched. Shall be glad to have photos. mentioned in yours of 14th inst.

F. W. MAXWELL (Chichester).—Photo. too indistinct to print.

THE MEN OF THE FUTURE.

SENSES THAT CIVILISED MAN IS LOSING.

DEEP researches as to the structure of the human body have recently furnished some startling facts regarding changes which man is at present undergoing physically.

Albrec has clearly proved that man was formerly endowed with more teeth than he possesses now. Abundant evidence exists that ages and ages ago, human teeth were used as weapons of defence.

Unintentionally, traces of such use are often revealed by a sneer. The teeth are sometimes bared, dog-like, ready, as it were, for action. The muscles thus brought into play are aptly called "snarling muscles" by Sir C. Bell.

The practice of eating our food cooked, and the disuse of teeth as weapons, are largely responsible for the degeneration that is undoubtedly going on.

The wisdom teeth, in fact, are disappearing. Human jaws, found in reputed Palæolitic deposits, have wisdom teeth with crowns as large as, if not larger than, the remaining molars.

Changes are also taking place in the cage-like part of the skeleton known as the thorax. The vertebral column, or back-bone, was furnished, in the remote past, with a far greater number of ribs than at present.

ALTERATIONS IN THE FEET

are very marked. As the foot became a support for the body, instead of a seizing organ, its form changed considerably, and the muscles of the leg became larger. At the present time all the toes, with the exception of the great toe, are retrograding; indeed, the little toe is becoming double-jointed, like the thumb.

A comparison with the change that has taken place in the horse is of great interest. The horse at one time possessed five toes. One of these gradually developed, and the nail or claw finally became exaggerated into a hoof. Rudimentary bones of toes are still found in the horse of to-day, while fossils of the existing horse are extant with these toe bones much more highly developed. Lastly, to crown all, an ancestor of the horse has been discovered having four complete toes and one rudimentary.

Man appears to be going through the same change as the horse has undergone. In ancient times a short-sighted soldier or hunter was almost an impossibility; to-day a whole nation is afflicted with defective vision.

It is almost certain, says *The Family Doctor*, that man once possessed a third eye, by means of which he was enabled to see above his head.

The human eyes formerly regarded the world from two sides of the head; they are even now gradually shifting to a more forward position.

In the dim past the ear-flap was of great service in ascertaining the direction of sounds, and operated largely in the play of the features. But the muscles of the ear have fallen into disuse, for the fear of surprise by enemies no longer exists.

Again, our sense of smell is markedly inferior to that of savages. That it is still decreasing is evidenced by observations of the olfactory organ. But the nose itself indicates a tendency to become more prominent.

Physical Culture for Babies.

Physical culture for babies has opened a new and profitable employment for women in New York. There are many rich parents who seldom bother about exercise for themselves, but who want their babies to grow up straight-limbed, deep-chested, and strong, and it is well, not only for the babies, but for the nurses who get most of the work. One woman can put half a dozen babies in as many hours through their daily stunts. Every muscle the baby has gets its share of the exercise, and careful mothers have the gymnastics continued until the little ones are big enough to work alone in gymnasiums.

Answers to Correspondents

Are necessarily so brief as to leave much desired in regard to Readers' training.

—very much—to be the case where any proper direction of affects development.

This is especially with the early or ad-
ailment exists that gestion, constipation,

If you are troubled somnia, or other ner-
vanced stages of indi- disorders, you really
loss of vigour, in- continuous direction
vous and functional better of your trouble
need very careful and thus at the same
if you are to get the tion for your future
as quickly as possible, body and mind.
time lay a firm founda-
health and strength of

I will gladly assist you if you would like me to do so.

In the first place will you please apply for a copy of my book explanatory of my *curative treatment*. I shall be pleased to send it to you as a Reader free of charge, and post free. The book contains details in full, and also includes a blank form containing questions which you will find will enable you to state your case wonderfully clearly. My advice and direction of your treatment would be based on your replies to these queries, and as affected by later reports of your continued improvement under my personal direction.

Please address me personally, and I will quickly send you book and full particulars for your guidance.

Eugen Sandow, Dept. S., 17 & 18 Basinghall St., London, E.C.

PEOPLE WITH IMAGINARY AILMENTS.

SOME time ago physicians manifested considerable interest in discussing the question whether or not imagination could kill. It seems a woman died in the city under peculiar conditions. She had taken a perfectly harmless draught, which she supposed to be prussic acid. She suffered intense pain, which ended in death. The suffering was just as severe as though she had actually taken the poison. A great many cases were cited by eminent doctors to demonstrate the power of imagination. Observing physicians are aware that imaginary diseases are common; in fact, all diseases are influenced more or less by, if they are not entirely due to, the imagination.

The mere thought of plunging into cold water on a cold morning may cause chilliness, says Dr. D. H. Kress, in Australian *Good Health*, and produces results similar to an actual plunge; in fact, injury frequently results from an imaginary plunge, for from it there is no reaction, while an actual plunge is usually followed by a good reaction and a feeling of warmth. The one unbalances the circulation, causing internal congestion, while the other equalises and improves the circulation. People who are constantly in fear of draughts are the ones who always have colds, while those who fearlessly sleep with open windows and regard fresh air as a great blessing are free from colds the year round.

During epidemic diseases there are always those who are stricken down because of fear, who would otherwise escape. Any supposed remedy, no matter how worthless, in which sufficient faith is exercised, removes the fear and acts as a preventative. Worthless remedies are in this way frequently eulogised and immortalised.

No one is so certain of having continued digestive disturbances as the one who is in constant fear that what he eats will disagree. The mind in such a subject inhibits the digestive process, making it impossible for these organs to digest even the simplest foods, which otherwise they would digest with ease. Imaginary diseases, it will be readily seen, are most difficult to treat. Should the physician state the truth to his patient or intimate that the trouble existed in his mind, it would create offence. Should he prescribe what is actually needed, open windows and pure air, or a good morning tonic bath, or wholesome foods; the past experience is arrayed against science and knowledge, the patient says, "But, doctor, it is sure to disagree with me, and result in injury." Should the instruction of the physician be carried out, the prediction would certainly come true, and would serve to demonstrate more effectually that the physician was wrong, and did not understand the case.

Persons who were for years unable to walk have been known to be permanently cured by an alarm of fire. Faith exercised in even injurious remedies has been known to have a beneficial influence on the mind, and resulted in good. But sometimes these subjects fall into the hands of so-called faith healers, and they are made to believe there is no such thing as disease, that disease exists only in the mind—which is really true, as far as they are concerned—and if they can be fully persuaded upon this point, a marvellous recovery may be expected.

Those who have diseases which have their origin in the mind sometimes derive great benefit from the use of drugs or narcotic poisons, as alcohol, tea, coffee, tobacco, etc. These exhilarate or stupefy the mind so that business cares, anxieties, home sorrows, and other depressing mental influences which retard digestion, etc., are for the time forgotten.

1,200 lbs. of Humanity.

Nine brothers, each more than six feet tall, each weighing more than 200 lbs., and each a prosperous citizen of the community in which he resides, will be re-united after eighteen years at their parents' home in Chicago within the next few days. Their homes are scattered over three different continents.

Our Readers' Library.

Any of these Books can be obtained direct and by return post from Our Readers' Library Department, Sandow's Magazine, 131, Temple Chambers, E.C.

Self-Reliance or Self-Esteem

As an element of human character. This would set many a man or woman in much better relation with themselves and to society than they now are. Price 7d. post free.

Digestion and Dyspepsia.

A complete Explanation of the Physiology of the Digestive Processes, with the Symptoms and Treatment of Dyspepsia and other Disorders of the Digestive Organs. By R. T. TRALL, M.D. 51 illustrations. Cloth 4s., postage 4d. extra.

Diet and Digestion.

A Series of Articles on Food, and how it is Digested. By Dr. T. R. ALLINSON. 6d., post free 7d.

The Royal Road to Beauty.

Health and Higher Development. Based on Diet and Proper Habits of Life. By CARRICA LE FAVRE. 1s., post free 1s. 2d.; cloth 3s., postage 3d. extra.

Full of suggestions to those who would improve bodily, mental, and moral conditions.

Water Cure for the Million.

The Processes of Water-Cure explained. By R. T. TRALL, M.D.—1s., post free 1s. 2d.

This work exposes popular errors, contrasts Hygienic and Drug Medication, gives rules for Bathing, Dieting, Exercising, etc., and Practical Directions for Home Treatment.

From Land's End to John O'Groats.

By GEORGE H. ALLEN, the Vegetarian Long-distance Walker. Being an account of his record walk, in which he accomplished 908½ miles in 16 days, 21 hours and 33 minutes. Price 1s. net, post free 1s. 2d.

Sub-Consciousness.

By R. DIMSDALE STOCKER.

The well-known author, whose previous efforts have been so well appreciated by the public and Press, explains in eight lessons the diverse phenomena, as indicated below, and gives practical suggestions and instructions for directing them to given ends.

LESSON 1. Thought Currents and how to Direct Them.—2. Telepathy in its Practical Application.—3. Imagination, its Possibilities, Scope, etc.—4. The Sleep World.—5. Hypnotism and Suggestion.—6. The Wonders of the Will.—7. Healing, and the Law of Mental Medicine.—8. The Making of a Genius. Price 3s. 10d. post free.

Massage.

Principles and Remedial Treatment by Imparted Motion. Description of Manual Processes. By G. H. TAYLOR. 203 pages. Cloth, 4s. 6d., postage 4d. extra.

Physiognomy and Expression.

By P. MANTEGAZZA. Illustrated. Second Edition, 3s. 6d., postage 3d. extra.

"Brings this highly interesting subject even with the latest researches. . . . Professor Mantegazza is a writer full of life and spirit, and the natural attractiveness of his subject is not destroyed by his scientific handling of it."

Mental Art; or, the Art of Mind Development.

By SAMUEL GEORGE.

A new book by a new author, which is on a novel plan and interesting subjects. It deals with the delineations of character by Occult Science, and contains a character sketch by skilled practitioners in Phrenology, Physiognomy, Palmistry, Graphology, Psychometry, Solar Biology and Astrology, and shows how far these Sciences agree in delineating one man's character. It will open the eyes of every thinking man and woman, and be of immense value to business and commercial men in advising them concerning the choice of their partners and employees, and in detecting the traits of their customers' character. The individual dealt with in the delineations shows how he was able to develop latent faculties and to acquire mind powers by the aid of mental science. Although it is perfectly scientific and absolutely true it reads like romance. There is not a dull line in it. Price 1s. 9d., post free.

Human Magnetism;

Its Nature, Physiology, and Psychology. Its uses as a remedial agent in Moral and Intellectual Improvement, etc. By H. S. DRAYTON, LL.B., M.D. 168 pages, illustrated. Cloth, 4s., postage 4d. extra.

Health Exercises

And Home Gymnastics without the use of Appliances. By HARTVIG NISSEN. Illustrated. 1s., post free 1s. 3d.

Strength, and How to Obtain It.

With Anatomical Chart, illustrating Exercises for Physical Development. By EUGEN SANDOW. Revised edition. 2s. 6d. net, post free 2s. 9d.

Notes on Beauty, Vigour, and Development.

Or How to Acquire Plumpness of Form and Strength of Limbs. Illustrated. By W. MILO. 6d., post free 7d.

Mind Power.

By ALBERT B. OLSTON.

The object of this volume is to give the general public the necessary evidence of the mind's power over the functions and conditions of the body, and to teach the reader how to avail himself of the resources of his mind, which are as yet so little understood or appreciated. Price 4s. 10d., post free.

Have you a Strong Will?

How to Develop and Strengthen Will Power, Memory, or any other faculty or attribute of the Mind by the easy process of Self-hypnotism. By CHARLES GODFREY LELAND. Price 3s. 10d., post free.

The New Psychology.

By E. W. SCRIPTURE, Ph.D. (Leipzig). With 124 illustrations, 6s., postage 4d. extra.

"We have at present no work in English which gives in so compact a form so comprehensive a view of the subject."

Digitized by Google

SUBSCRIPTION.

To the Manager—
SANDOW'S MAGAZINE,
131, Temple Chambers,
LONDON, E.C.

Please forward SANDOW'S MAGAZINE *for* $\frac{\text{one year}}{\text{six months}}$ *beginning* ..... *for which I enclose* $\frac{\text{10s. 6d.}}{\text{5s. 6d.}}$

NAME .....

ADDRESS .....

.....

DATE .....

BOUND VOLUMES.

Please supply :

Volumes I., VIII., IX., X., XI., XIII. and XIV.,

Sandow's Magazine at 6s. each.

Volumes II., III., IV., V., VI., VII. and XII.

Special quotations on application.

Cheques and Postal Orders to be Crossed London and County Bank.

Amusements.

THEATRES.

ADELPHI—At 8.30, "Taming of the Shrew." Mat. Wed. and Sat. at 2.15.

APOLLO—At 8, "The Dairymaids." Mat. Wed. at 2.

ALDWYCH—At 8, "The Beauty of Bath." Mat. Sat. at 2.

COMEDY—At 8.30, "Raffles." Mat. Sat. at 2.30.

COURT—At 8.15, "You can never tell." Mat. Wed. at 2.30.

DALY'S—At 8.15, "The Geisha." Mat. Sat. at 2.30.

WYNDHAM'S—At 8.15, "The Girl behind the Counter." Mat. Wed. at 2.15.

DUKE OF YORK'S—At 8.20, "The Marriage of Kitty." Mat. Thur. and Sat. at 2.20.

GARRICK—At 8.30, "The Fascinating Mr. Vanderveldt." Mat. Wed. at 2.30.

PRINCE OF WALES—Every evening at 8.15. Mat. Wed. at 2.15. "See-See."

HAYMARKET—At 8.30, "The man from Blankley's." Mat. Wed and Sat. at 2.30.

ST. JAMES'—At 8.15, "The House in Order." Mat. Wed. and Sat. at 2.

VAUDEVILLE—At 8, "The Belle of Mayfair." Mat. Wed. and Sat. at 2.15.

VARIETY THEATRES.

ALHAMBRA—At 7.45 "L'Amour" and Varieties.

EMPIRE—At 8, "Coppelia," and varieties.

LONDON HIPPODROME—At 2 & 8, "The Flood." Three Olympiers, etc.

LONDON PAVILION—At 7.30. Mat. Sat. at 2.15. La Milo, Alice Pierce, T. E. Dunville, etc.

OXFORD—At 7.30. Mat. Sat. at 2.30. Six Brothers Luck, George Bastow, Victoria Monks, etc.

PALACE—At 7.45. Mat. Sat. at 2. Guerrero, Colberg Family, Fred Niblo, etc.

TIVOLI—At 7.30. Mat. Sat. at 2.15. Harry Tate, Annie Purcell, Gus Elen, etc.

Digitized by Google

PHYSICAL CULTURE APPLIANCES.

One Quality and Value. THE BEST.

SANDOW'S DEVELOPER

PRICE 12/6, postage 8d. extra.

This contrivance has attained such world-wide reputation that a description of it is almost superfluous. It consists of a combination of rubber cords and dumb-bell attachments, and its ingenious construction allows of its being used as :—**A Wall Exerciser, Heavy Weight-Lifting Machine, Chest Expander,** or for **Light Dumb-bell Exercises.** A complete set of charts is supplied with each machine.

SPRING-GRIP DUMB-BELLS

Muscle is developed by will-power, not by mechanical movement, and by using these dumb-bells a continual exercise of will-power is assured, enabling results obtainable impossible with any previous dumb-bell. Everybody should use them. Chart of Exercises presented with each pair.

PRICES, 12/6 (Nickelled, 7 springs), 7/6 (Enamelled, 5 springs), 5/- Child's (2 springs), Postage 6d. extra.

CONCENTRATED EMBROCATION

PRICE 2/9 per Tube, post free.

In the production of this embrocation the materials used are entirely vegetable and are so blended that not only is it **very strong,** but rapid in its action and only occupies a small bulk. The majority of embrocations are simply lubricating oils used as an adjunct to massage. **Sandow's Concentrated Embrocation** is an emollient which, from its inherent properties, acts favourably on the structures massaged.

The SYMMETRION

PRICE 12/6, postage 6d. extra.

is not designed to create muscular development, but to produce that symmetry of form which is all-important. No woman who values a good appearance should be without this appliance. Its principal feature is that it accomplishes the improvements with a minimum of exertion, thus remedying the chief defect of every other form of lady's apparatus.

The above can be obtained by return of post from . . .

The Sandow Magazine Co. (Appliances Dept.), 131 Temple Chambers, London, E.C.

Specially introduced at the request of the Medical Faculty.

Fry's MALTED COCOA.

A Combination of FRY'S Pure Cocoa and ALLEN & HANBURYS' Extract of Malt.

THE value of Extract of Malt as a nutritive and restorative agent for delicate and exhausted constitutions is now fully acknowledged by the Profession, the extract being rich in muscle and fat-forming elements. It promotes moreover, in a special and peculiar manner, the solution and digestion of all farinaceous foods, and is therefore a valuable remedy in those diseases which arise from an imperfect assimilation of these substances. The presence of the active and valuable constituents of the Malt, unimpaired and in a concentrated form, is secured in ALLEN & HANBURYS' Extract by a very careful selection of the Malt used, and the greatest attention to the temperatures at which the processes of the mashing and subsequent evaporation *in vacuo* are carried out.

An ordinary portion contains more of the active properties of Malt than a pint of the best ale or porter.

The combination, therefore, of ALLEN & HANBURYS' Extract of Malt with FRY'S Pure Cocoa Extract supplies to invalids and all those possessed of weak digestive powers a delicious, refreshing, and invigorating beverage for breakfast, luncheon or supper.

Both of its constituents being highly concentrated, the MALTED COCOA is economical in use, and possesses highly nutritive properties, and on this account can be recommended with great confidence to the public.

THE OLDEST HOUSE IN THE TRADE. ESTABLISHED 1721.

REDUCED SIZE.

How Embrocation aids Athletes.

Athletes *must* possess sound constitutions, perfect health, and strong supple muscles. Proper diet and systematic exercise will give the two former, **Sandow's Concentrated Embrocation** ensures the last—but not least. The importance of a really efficient Embrocation to Athletes in training is often overlooked and hardly ever used except in the case of a strain or sprain.

This is a great mistake. Embrocation should always be used *before* exercise, as massage with a good Embrocation enables the muscles to do more work with less fatigue; *after* exercise it relieves fatigue and brings comfort to the tired muscles.

Sandow's Concentrated Embrocation

does this, does it effectually and does it always. Regular use of this Embrocation brings and keeps the muscles in perfect condition, relieves muscular stiffness, and heals sprains, strains, bruises, or injured joints.

For **Rheumatism, Sciatica, Lumbago, Neuralgia, Colds, Sore Throat, &c.**, it is an unsurpassed remedy. It has cured Rheumatism of over 14 years' standing.

It is highly concentrated and thus rapid and certain in result. It cannot be spilt, is easily and exactly applied, and waste is impossible. It is convenient to carry, for there is nothing to break.

A 32-page booklet, with photographic illustrations showing the correct method of application for each of its many purposes, is presented with each tube.

Sold by all Chemists, Stores and Athletic Outfitters at 2s. 9d. per tube, or post free on receipt of a Postal Order for this amount direct from—

SANDOW'S EMBROCATION CO., Sandow Hall, Victoria Embankment, London, W.C.

Printed by THOMAS & BURCHELL, LTD., High Street, Poplar, and Published by the Proprietors, at 131, Temple Chambers, London, E.C.